
Navigation Improvement Study
Detailed Project Report and
Environmental Assessment

Josias River at Perkins Cove Ogunquit, Maine



**US Army Corps
of Engineers**
New England Division

JUN 1990

JOSIAS RIVER
AT PERKINS COVE
OGUNQUIT, MAINE

NAVIGATION PROJECT

DETAILED PROJECT REPORT
AND
ENVIRONMENTAL ASSESSMENT

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

EXECUTIVE SUMMARY

This study investigates the existing navigation conditions in Perkins Cove, Ogunquit, Maine, to determine the feasibility of Federal involvement in access channel and anchorage improvements for commercial fishing vessels. The present conditions in Perkins Cove where there is an existing Corps project, do not provide for safe and reliable navigation due to shallow areas in the channel and anchorage. As a result, vessels must wait for the tide or risk hull damage, both of which are economic losses.

The limited open water in the cove prohibits expansion of the anchorage area or widening of the access channel. The harbor facility has been operated at 100 percent capacity for many years. The only practical option for improving navigation conditions is to deepen the existing channel and anchorage area. This study analyzes various alternatives for increasing depths and the savings each alternative provides to the existing fleet.

Three alternatives were developed and evaluated in order to determine the optimal depth for the present fleet, after consideration of both existing and future conditions. The optimum plan of improvement is to deepen the entrance channel and 2.1 acres in the southeastern half of the anchorage area to 7 feet below mean low water (MLW).

As a result of further study it was determined that certain bulkheads surrounding the anchorage area would be negatively impacted by the proposed plan. A slightly revised plan that would avoid these impacts has been designed. A buffer zone located in critical areas would provide the necessary distance for which dredging to a 7-foot depth could be safely performed. The project limits have been redefined to incorporate this buffer zone (see attached plan). Whereas the revised project limits would cause a 0.3 acre net loss of overall anchorage space, the project intent of deepening 2.1 acres to -7 feet (MLW) for commercial needs will still be maintained. The loss of anchorage would not result in the loss of mooring spaces as town officials have indicated these areas are currently unused due to severe shoaling.

Approximately 12,000 cubic yards of silt, coarse sand, gravel and rock would be removed by mechanical dredging after blasting of bedrock. The dredged material would be transferred by barge to an open ocean disposal site located 2.75 miles offshore of Cape Arundel, Maine. The dump site is approximately seven nautical miles northeast of Perkins Cove.

The total cost for the recommended plan, based on May 1989 price levels, would be \$326,000. Annual benefits, based on October 1989 price levels, would be \$113,000 as compared to annual costs of \$29,000 resulting in a benefit to cost ratio of 3.9. Local interests would be required to contribute 33 percent of the first cost of the Federal project, or \$108,000. These cost-sharing requirements are as specified in the Water Resources Development Act of 1986 (Public Law 99-662).

Any required future maintenance dredging would be accomplished by the Federal government in conjunction with the town of Ogunquit, contingent

upon the availability of maintenance funds, the continuing justification of the project and the environmental acceptability of maintenance activities.

The Division Engineer finds that modification of the existing Federal navigation project in Perkins Cove, Ogunquit, Maine would result in significant economic benefits to the commercial fishing fleet and the local economy, exceeding annualized costs. For this reason, Federal involvement in the navigation improvements in Perkins Cove is recommended.

PERKINS COVE, OGUNQUIT, MAINE
RECOMMENDED PLAN
PROJECT ECONOMICS
(May 1990 price levels)

FIRST COST:	\$ 326,000
LOCAL SHARE:	\$ 108,000 (33%)
FEDERAL SHARE:	\$ 218,000 (67%)

NAVIGATION AIDS: -0-

INTEREST DURING CONSTRUCTION	\$ 1,000
	TOTAL COST: \$ 327,000

COMMERCIAL BENEFITS:	\$ 63,000 (56%)
JOINT-USE RECREATIONAL BENEFITS:	\$ 50,000 (44%)
	TOTAL BENEFITS: \$ 113,000

ANNUAL COST:	\$ 29,000
ANNUAL BENEFITS:	\$ 113,000
ANNUAL NET BENEFITS:	\$ 84,000
BCR:	3.9

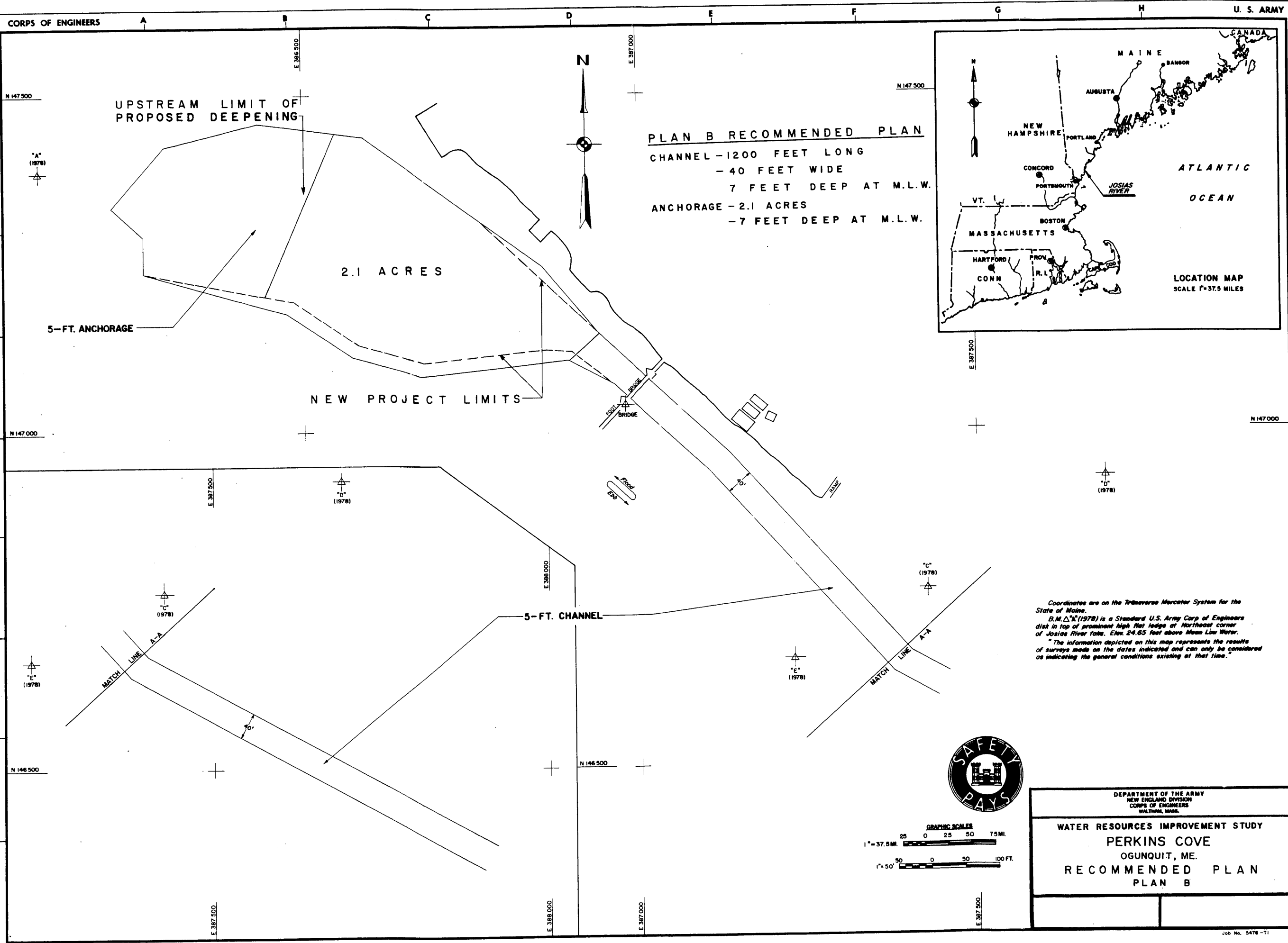
COST APPORTIONMENT:

NON-FEDERAL COST SHARE:

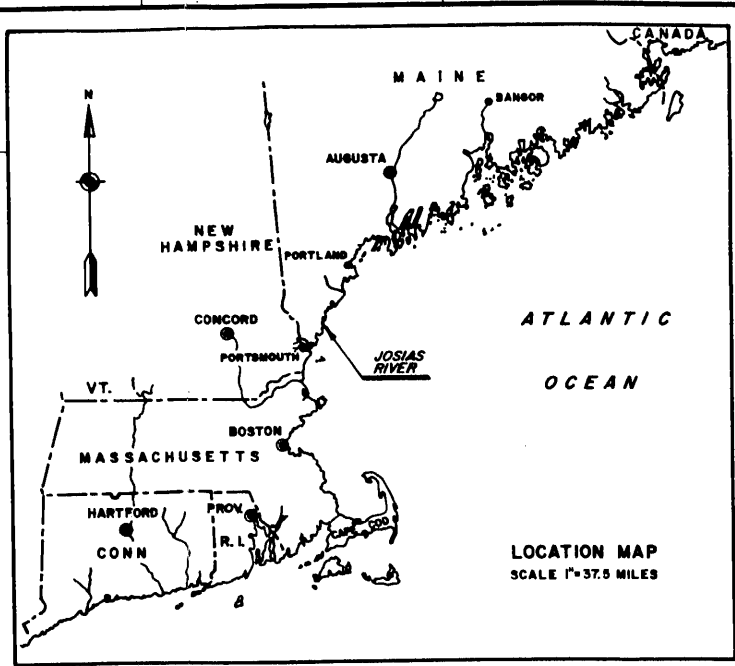
 COMMERCIAL APPORTIONMENT: \$ 36,000
 (56% X 20% = 11%)

 JOINT-USE RECREATION APPORTIONMENT: \$ 72,000
 (44% X 50% = 22%)

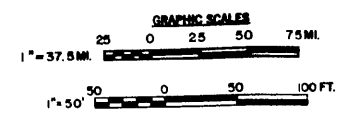
FEDERAL COST SHARE: \$218,000
 (67%)



PLAN B RECOMMENDED PLAN
CHANNEL - 1200 FEET LONG
- 40 FEET WIDE
7 FEET DEEP AT M.L.W.
ANCHORAGE - 2.1 ACRES
- 7 FEET DEEP AT M.L.W.



Coordinates are on the Transverse Mercator System for the State of Maine.
B.M. Δ "K" (1978) is a Standard U.S. Army Corp of Engineers disk in top of prominent high flat ledge at Northeast corner of Josias River Falls. Elen. 24.65 feet above Mean Low Water.
"The information depicted on this map represents the results of surveys made on the dates indicated and can only be considered as indicating the general conditions existing at that time."



DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	
WATER RESOURCES IMPROVEMENT STUDY PERKINS COVE OGUNQUIT, ME.	
RECOMMENDED PLAN PLAN B	

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1.0 INTRODUCTION

This Definite Project Report (DPR) is the result of an engineering, environmental and economic feasibility study of navigation improvements in the Josias River and Perkins Cove at Ogunquit, Maine. The Josias River, where it empties into the Atlantic Ocean at Perkins Cove, forms a small, well protected harbor, which is home port to the commercial fishermen of the town of Ogunquit, Maine.

The study was initiated at the request of Ogunquit town officials in a letter dated 8 May 1981. The town requested that the Corps of Engineers study the feasibility of Federal participation in improving the navigation conditions in the Josias River and Perkins Cove. The specific local interest is the deepening of the existing basin to accommodate the larger, deeper draft, commercial fishing vessels which have been added to the local fleet during a recent period of modernization. The larger vessels have diversified the resources harvested ensuring the continued viability of commercial operations at Perkins Cove.

The first step in the study process was the preparation of a reconnaissance report. The recommendation of that initial reconnaissance report was that a more detailed investigation into the navigation conditions in the Josias River at Perkins Cove was warranted. This DPR documents the findings of a detailed investigation of alternative solutions to the navigation problems at Perkins Cove.

1.1 Study Authority

This DPR is prepared and submitted under the authority and provisions of Section 107 of the 1960 River and Harbor Act, as amended.

1.2 Scope of Study

The scope of this Definite Project Report is:

- o Determining the navigational problems and needs of the area,
- o Determining the most probable future condition without Federal improvements,
- o Developing alternative improvement plans,
- o Evaluating the engineering, economic, environmental, and social impacts of the alternative plans, with respect to the future condition,
- o Recommending improvements that are engineeringly and economically feasible, environmentally acceptable and socially beneficial.

The geographic scope is:

- o The tidewater portion of the mouth of the Josias River at Perkins Cove,
- o The existing anchorage and entrance channel at Perkins Cove,
- o Areas of possible project impacts beyond the immediate vicinity of Perkins Cove, including the dredged material disposal site.

1.3 Prior Studies and Improvements

1.3.1 Federal

The first Federal study of the Josias River and Perkins Cove resulted in a Preliminary Examination published in 1911. The navigation improvements considered in the study included the construction of a breakwater between Adams Island and the mainland, and a channel from Perkins Cove to Flat Pond, the site of the present day anchorage basin. The findings of the report were unfavorable. A second report, completed in 1930, also a Preliminary Examination, focused on providing an access channel from Perkins Cove to Flat Pond measuring 40 feet in width and 3 feet below mean low water (MLW); again the findings were unfavorable.

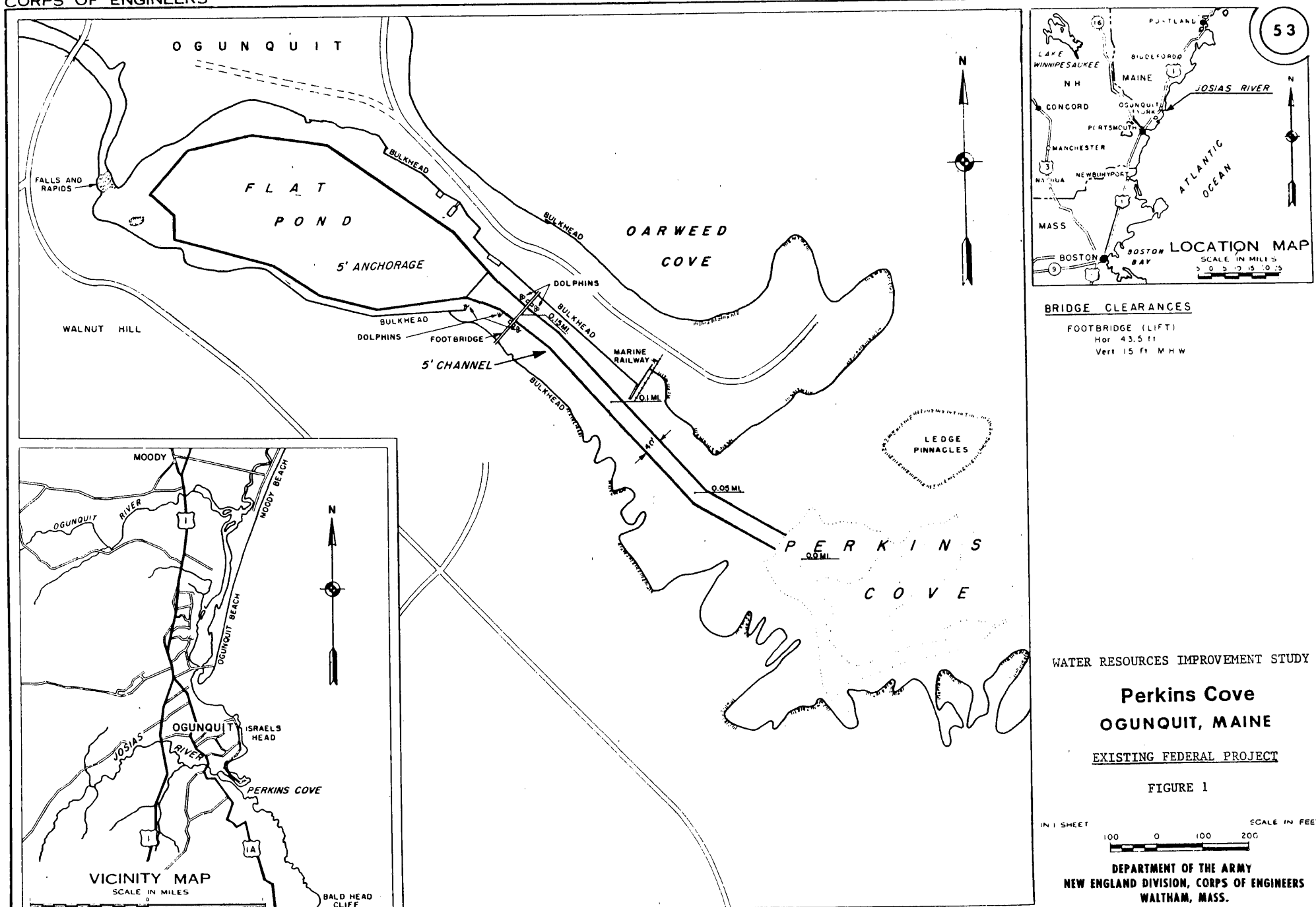
A third Preliminary Examination completed in 1935, resulted in a favorable survey report published in 1939. The report recommended Federal involvement in constructing a navigation channel, 5 feet below MLW and 40 feet wide, extending approximately 900 feet from deep water in Perkins Cove to an anchorage in Flat Pond. The anchorage was to be dredged to a depth of 5 feet below MLW with an area of 3.2 acres. This recommended improvement was authorized under the River and Harbor Act of 2 March 1945. Construction was completed in 1951 and consisted largely of removing rock pinnacles since local interests had dredged the basin and channel during the war.

A fourth study, authorized in 1949, was completed 9 May 1957. The study considered the feasibility of providing a breakwater extending southeast from Adams Island 350 feet to the ledge at the entrance to Perkins Cove. It was determined that this navigation improvement plan was not economically justified. The survey report recommended that the existing anchorage be increased by one acre to a depth of 5 feet below MLW to provide a total anchorage area of 4.2 acres. This modification was authorized on 3 July 1958, and construction was completed in March 1960.

The existing Federal project, shown in Figure 1, is the result of the above mentioned studies and authorizations.

1.3.2 Non-Federal

Local improvements in the Josias River began early in this century when the river's course was altered by the construction of a canal through the Flat Pond marsh. The canal diverted the river flow from Oarweed Cove to Perkins Cove when the old river mouth at Oarweed Cove was filled in. This improvement to the Josias River enabled vessels mooring in Oarweed Cove to transfer to the larger and more sheltered Perkins Cove area. Between 1928 and 1941 local interests unsuccessfully attempted to maintain a channel between Perkins Cove and Flat Pond in an effort to make access to Perkins Cove navigable at all stages of tide.



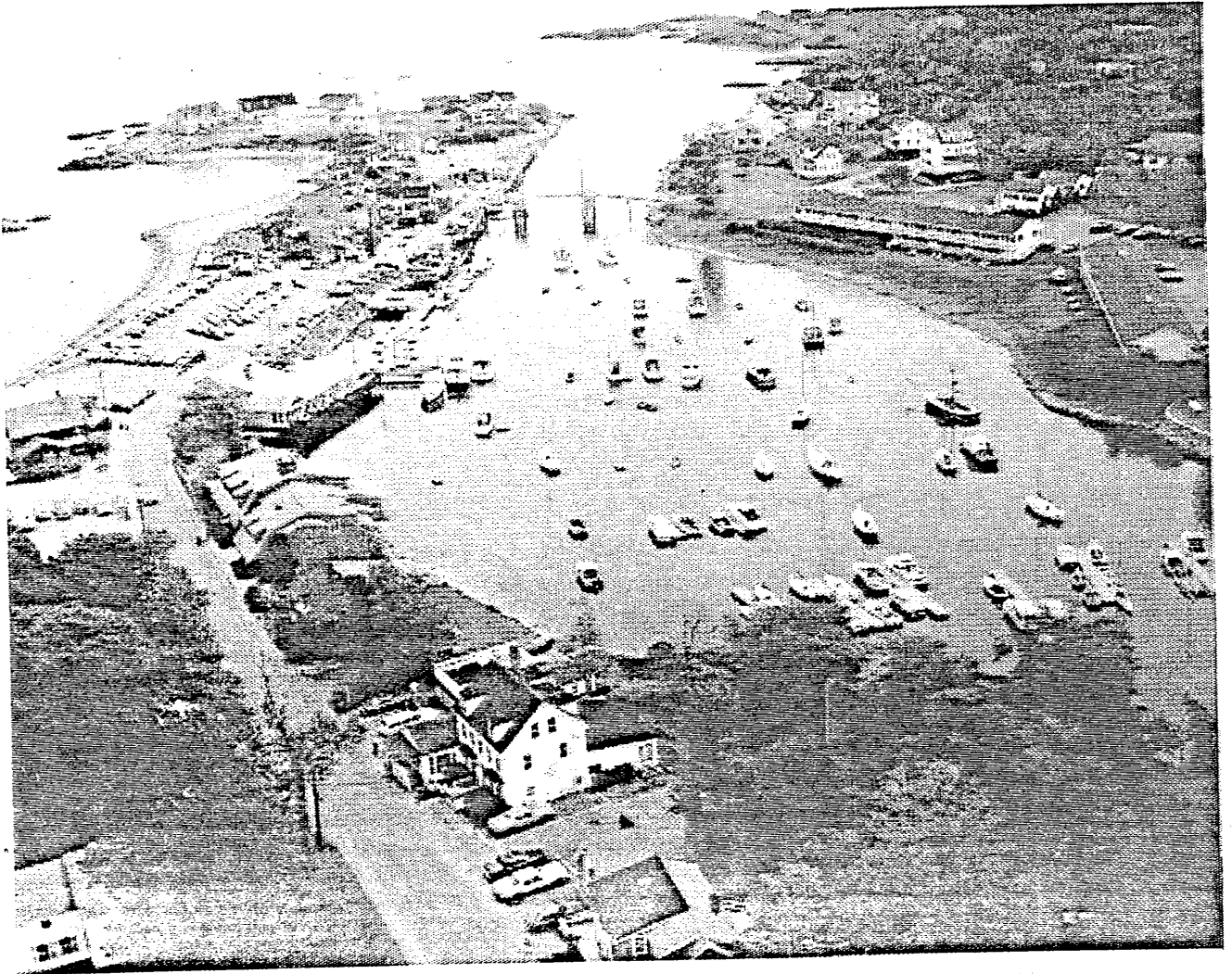
In 1941 local interests dredged a basin in Flat Pond and an access channel from Flat Pond to Perkins Cove as Federal expenditures on Civil Works projects had been suspended during the war effort. This work was completed based on the favorable recommendations of the 1939 Federal Survey Report. Local interests were credited with this work when the Federal project was later constructed. The dredged material was deposited in the area between Adams Island and the mainland north of the basin to serve as a breakwater and causeway (see Figure 2). This area has since been improved and now serves as a pier and parking area. The pier is the site of several buildings and a public dock.

1.4 Study Participants and Coordination

The preparation of this report required the close cooperation of Federal agencies, state and local government agencies, the town of Ogunquit and interested individuals. Record of public involvement, agency coordination, and project correspondence are contained in Appendix 1.

1.5 The Report

This DPR summarizes the investigation of the most feasible alternative for providing navigation improvements at Perkins Cove. The initial steps in the study included a comprehensive inventory of available information, performance of topographic and hydrographic surveys, environmental testing and sampling, and preparation of base plans. Extensive efforts were expended in contacting public officials and interested parties to provide information and to seek public input in the study process. Based on these efforts, planning objectives and constraints were developed and plans formulated. These plans were developed and evaluated in coordination with interested parties and the final alternative plans were selected for detailed study.



PICTURE TAKEN SEPTEMBER 14, 1981 BY: James McDivitt

PERKINS COVE
OGUNQUIT, MAINE
FIGURE 2

2.0 PROBLEM IDENTIFICATION

This portion of the report discusses the nature and scope of the problems necessitating navigational improvements, and establishes the planning objectives and constraints that direct subsequent planning tasks.

2.1 Existing Conditions

Perkins Cove and the Josias River are located on the southern coast of Maine in the town of Ogunquit, York County. Ogunquit, a part of Maine's First Congressional District, is approximately 15 miles northeast of the city of Portsmouth, New Hampshire and 33 miles southwest of the city of Portland, Maine. Ogunquit can be reached by U.S. Route One. Access to Perkins Cove is provided by Route 1A. The town of Ogunquit and vicinity can be located on the U.S. Geological Survey Map entitled "York, Maine", or on the National Ocean Survey Chart #13286 entitled "Cape Elizabeth to Portsmouth."

Ogunquit was a self-governing village corporation within the town of Wells since 1913 and became a fully independent town in 1980. Ogunquit covers a 4 square-mile area and has a year-round population of 1,492, a 58.1 percent increase since 1970 (1980 Census). The State of Maine, on the average, has experienced a 13.2 percent increase in population over the same ten year period. The influx of seasonal residents swells Ogunquit's population to over 10,000 persons during the summer months.

Ogunquit is a small scenic resort community whose major source of income is tourism. There are dozens of restaurants, motels/hotels and gift shops that cater to the seasonal tourist trade. The chief attractions are the Ogunquit Summer Playhouse, numerous antique and gift shops, and the picturesque ocean-front setting. Residents of Ogunquit work in local establishments, or commute to work in Portsmouth or other neighboring towns. Other commercial ventures include the commercial fishing fleet and charter fishing boats that operate out of Perkins Cove.

The dominant land use in the vicinity of the cove is commercial. The commercial properties include restaurants, stores and lodgings at the harbor. The restaurants and stores are located on the east bank of the harbor on the spit of land that separates the cove from the Atlantic Ocean. There is also a large town parking lot, excursion boat floats and a marine railway that is used to haul craft of up to 50 feet from the waters of Perkins Cove. Residential properties are located beyond the town pier on Adams Island. The west bank is occupied by two modern motel complexes and a few private homes.

Perkins Cove is one of the smallest, most crowded harbors on the coast of Maine. The inner portion of the cove is accessed by a narrow entrance channel which leads from deep water in Perkins Cove to an anchorage basin at the head of the harbor formerly known as Flat Pond. The entrance channel is approximately 900 feet long by 40 feet wide and is crossed by a

drawspan footbridge with a closed 16-foot mean high water vertical clearance and a 40-foot horizontal clearance. The opening at the footbridge limits the size of vessel that can access the anchorage. The anchorage area can accommodate approximately 70 vessels. The town incorporates a two point mooring system for all vessels.

As shown in Figure 1, Perkins Cove is located south of the village center and is Ogunquit's only harbor. Originally the Josias River flowed through the Flat Pond marsh and out into Oarweed Cove. Local interests altered the course of the river and diverted it into Perkins Cove by constructing a channel across the marsh between Adams Island and the mainland to the northwest. The channel into Oarweed Cove was filled and the local fleet moved from Oarweed Cove to the more protected Perkins Cove. The site of the original channel became what is now the town pier. The pier was originally constructed as a breakwater and causeway between Adams Island and the mainland. The structure has since been enlarged to its present condition to support several buildings, a public parking area and public dock. The Flat Pond marsh and access channel were later dredged by local interests, and in subsequent years by the U.S. Army Corps of Engineers. The existing project includes a 4.2-acre 5-foot deep (MLW) anchorage basin, and a 40-foot wide, 5-foot deep (MLW) access channel.

Perkins Cove and the Josias River Basin support a fleet of recreational and commercial vessels. The commercial fleet includes 25 commercial fishing vessels and 9 charter fishing vessels. The recreational fleet is comprised of 49 recreational craft of various types. The trend for the commercial fleet is to replace older fishing vessels with more efficient deeper draft vessels. These vessels, with larger holds and longer ranges, allow the commercial fishermen to better compete in the southern Maine fish industry by enabling them to harvest offshore fish resources more effectively. The new deeper draft vessels, however, are incurring additional operating costs due to a lack of depth within the existing anchorage at Flat Pond and access channel from Perkins Cove. Tidal delays of up to three hours encumber the operations of larger fishing craft. The additional operating costs include increased labor and fuel costs, and damages due to groundings. Those who invest in these larger vessels must choose to either remain at Perkins Cove and tolerate grounding damages and tidal delays, or transfer to another port capable of handling a larger, deeper draft vessel.

The recreational boating industry in New England is currently undergoing a rapid rate of growth. In the southern Maine Coastal Area this is related to an increase in the construction of seasonal second homes. As previously noted, the seasonal population in Ogunquit is approximately 10 times the year-round population. Similarly, the summer fleet (commercial and recreational) at Perkins Cove exceeds the off-season fleet (commercial only) by 114 percent. This growth is evident throughout the southern Maine coast and has prompted an increase in the demand for safe anchorage areas for the seasonal recreational fleet.

2.2 Conditions If No Federal Action Is Taken

If no Federal action is taken to improve the navigation conditions at Perkins Cove, the present conditions and current trends will continue.

Federal maintenance of the existing 5-foot channel would continue as required. The commercial fishing fleet, which is based primarily on lobster and some ground fish, would not change in number or vessel size. The existing fleet would continue to experience delays and damage to both vessels and lobster cages. The physical size of Perkins Cove will continue to restrict fleet expansion. Recent trends in the regional economics of lobstering indicate that there will not be any continued expansion of the lobster fishery. Over the last 20 years the number of lobster boats and traps have increased dramatically without any appreciable change in the total catch, meaning that the increase in operating costs (effort) has not been justified by a higher catch. The percentage of U.S. lobster consumption attributed to imported lobsters also continues to grow, acting to depress local lobster prices and limit the growth of revenue.

Depth limitations in the channel and basin will continue to restrict navigation of vessels drawing 4 feet or more, and boats of this type will continue to experience grounding damages and tidal delays. To eliminate these adverse impacts without Federal action, fishermen will either have to cease operation or relocate their base of operations to other ports that afford greater ease of navigation.

Some party other than the Federal government could provide for the deepening of the entrance channel and a portion of the basin at Perkins Cove. This, however, is unlikely since state funding for port development is aimed primarily at major industrial ports and fishing ports with a large number of landings. Local interests are incapable of securing all the funds necessary to invest in harbor improvements entirely on their own.

2.3 Problems and Needs

The principal navigation problem at Perkins Cove is identified as inadequate depth in the existing entrance channel and anchorage at Flat Pond. Vessels with a draft of 4 feet or greater must delay entering or leaving the harbor during low tide, resulting in higher operating costs. Many vessels have experienced grounding damage while underway in the channel and anchorage. If the commercial operators in Perkins Cove are to remain competitive in the southern Maine fish industry, the new larger, deeper draft vessels now utilizing the harbor must be better accommodated. If not, the existing commercial fleet could eventually be replaced by the growing seasonal recreational fleet as more commercial operators are forced out of the area. Therefore, the need at Perkins Cove is to increase the depth of the existing channel and anchorage areas sufficiently to provide the commercial fishing vessels unrestricted access at all tide levels.

All vessels moored in Perkins Cove utilize the Federal anchorage area. There are no mooring areas or facilities outside of the Federal project limits that would require dredging in conjunction with the Federal improvement project. No non-Federal dredging is anticipated with the project.

2.4 Planning Constraints and Objectives

Planning constraints are those parameters that limit the implementation of any proposed plan of improvement and serve to eliminate from consideration all those possibilities that offer no acceptable degree of satisfaction. These constraints can include natural conditions, economic factors, social and environmental considerations and legal restrictions.

In the case of Perkins Cove, the major constraints can be identified as natural and economic. The anchorage at Flat Pond and the access channel that leads to the anchorage are currently at their maximum limits in terms of expansion. Due to the configuration of the Flat Pond area the limits of the anchorage could not be expanded without extensive rock ledge removal, land takings and bulkhead construction. The existing bulkheads and granite block walls, particularly along the west shore of the cove, closely confine the existing project limits. The access channel is limited to the size of the opening of the footbridge that transverses the channel. The footbridge is a local landmark and tourist attraction. Its continued existence and maintenance is a condition placed upon the town by the terms of the transfer of the property to the town. Even if footbridge modifications were possible, any channel widening would require such a large extent of ledge removal as to make it economically infeasible.

Planning objectives were identified which address the navigation problems and needs of Perkins Cove. These objectives are:

- o Reduce the cost of commercial navigation in Perkins Cove during the 1987-2037 period of analysis.
- o Contribute to safer navigation conditions for the commercial fishing fleet in Perkins Cove during the 1987-2037 period of analysis.
- o Reduce tidal delays for commercial navigation in Perkins Cove.

3.0 FORMULATION OF PRELIMINARY PLANS

The consideration of the problems and needs of the study area led to the formulation of alternative preliminary plans. These plans are designed to achieve the planning objectives, and are developed with regard to the planning constraints and objectives previously identified. State and local objectives are important considerations in the evaluation of alternative plans.

3.1 Plan Formulation Rationale

The formulation of plans for navigation improvements at Perkins Cove are predicated on a standard set of criteria adopted to permit the development and selection of a plan which responds to the problems and needs of the area. Each alternative is considered on the basis of its effective contribution to the planning objectives, and selection of a specific plan is based on technical, economic, and environmental criteria which permits the fair and objective appraisal of the impacts and feasibility of alternative solutions.

Technical criteria require that the optimum plan have the facilities and dimensions necessary to accommodate the expected user vessels and sufficient areas to provide for maneuvering of boats and development or continued use of shore facilities. All plans must contribute to navigational efficiency and be complete within themselves.

Economic criteria require that the tangible benefits of the navigation improvement exceed the economic costs and that the scope of the project is such to provide maximum net benefits.

Environmental criteria require that the selected plan incorporate measures to preserve and protect the environmental quality of the project area. This includes the identification of impacts to the natural and social resources of the area and the minimization of those impacts that adversely affect the surrounding environment. This includes the assessment of impacts that are incurred during the construction of the proposed navigation improvements and those activities attracted to the area after plan implementation.

3.2 Management Measures

A broad range of management measures can be identified and evaluated as the basis for formulating alternative plans to solve the navigation problems in Perkins Cove. These management measures are categorized as either structural or nonstructural.

Structural measures are identified as those that involve the construction of features that would, to varying degrees, meet the planning objectives developed for Perkins Cove. These alternatives include the construction of a larger navigation channel and anchorage or the construction of a protective structure such as a breakwater. Nonstructural measures involve those solutions which would achieve the same objectives, but would do so without resorting to structural improvements. An example of a nonstructural measure would be the transfer of vessels to neighboring ports.

3.3 Analysis of Alternatives Considered in Preliminary Planning

A number of navigation improvement alternatives were developed and analyzed during the early stages of the planning study. These alternatives included various dredging options, construction of protective structures, and the transfer of the larger commercial fishing vessels to neighboring ports.

The development of additional safe mooring areas in Ogunquit would require the construction of major structures. To provide a safe anchorage in outer Perkins Cove would require the construction of a breakwater similar to the one previously studied in the 1957 survey and reported on unfavorably. Development of a new anchorage behind Ogunquit Beach in the Ogunquit River would require modification of the existing fixed span bridge at the river's mouth, which provides only a 5-foot vertical clearance above mean low water. This site is also subject to rapid shoaling due to the longshore transport of sand from Ogunquit Beach. A jetty and more frequent maintenance would be required at this site. A reorganization of mooring patterns in Perkins Cove would provide only a limited increase in total fleet size since the town now employs a two point mooring system and the anchorage is developed to capacity. With the lack of economic justification to provide significant structural remedies and the demand for safe mooring areas not only in Ogunquit, but in neighboring ports as well, it becomes apparent that to preserve the existing commercial fleet at Perkins Cove requires actions that provide for the safe and efficient operation of the new deeper draft commercial vessels.

The transfer of some of the larger fishing vessels to nearby harbors is predicated on the ability of these harbors to provide adequate protection, capacity, and efficiency of operation. Should such a port not provide adequate features and facilities, it is not likely that any commercial operators would transfer their craft. There are seven commercial fishing ports within a reasonable commute of Perkins Cove which were analyzed as alternative ports in which to transfer:

Cape Neddick Harbor, 4 miles to the south, is the closest harbor to Perkins Cove. This harbor has a very small inshore fleet and inadequate depths to accommodate offshore vessels. The outer harbor offers little protection against Atlantic Ocean waves and is safe for anchorage only in fair weather. Access to the inner harbor is limited by inadequate depth, the clearance limits of the highway bridge which separates the inner harbor from the outer harbor, and the almost complete lack of dock and shore facilities. A survey report completed by the Corps in 1962, found that Federal improvements, namely channel and anchorage dredging and breakwater construction, were unjustified.

Biddeford Pool is located 26 miles to the north of Perkins Cove. The pool has a large inshore fleet and inadequate depths to accommodate its present offshore vessels. Ice flows and chunk ice in the anchorage are a major winter problem. There is extreme overcrowding in the summer, due to the increase in recreational vessels. A preliminary report completed by the Corps in 1982 found that Federal improvements to the anchorage area would not be possible due to the lack of a proper disposal site.

Kennebunk River is located 5 miles north of Perkins Cove. The river has inadequate anchorage area to accommodate additional offshore vessels. The river has a large fishing fleet and many recreational vessels. Overcrowding during the recreational season is a major problem. Expansion of the current fleet would only add to the overcrowding problem. A Detailed Project Study completed in 1982 found that Federal improvements were not justified due to a lack of local interest in fleet expansion.

Kittery, located 17 miles to the south, is currently experiencing navigation problems due to inadequate depths in the channel and anchorage areas. Access is limited, due not only to inadequate depth, but also to the clearance of several highway bridges. There is also a problem with the lack of shore facilities. A reconnaissance report completed by the Corps in 1980 showed evidence that trying to transfer large vessels to Kittery would be impractical.

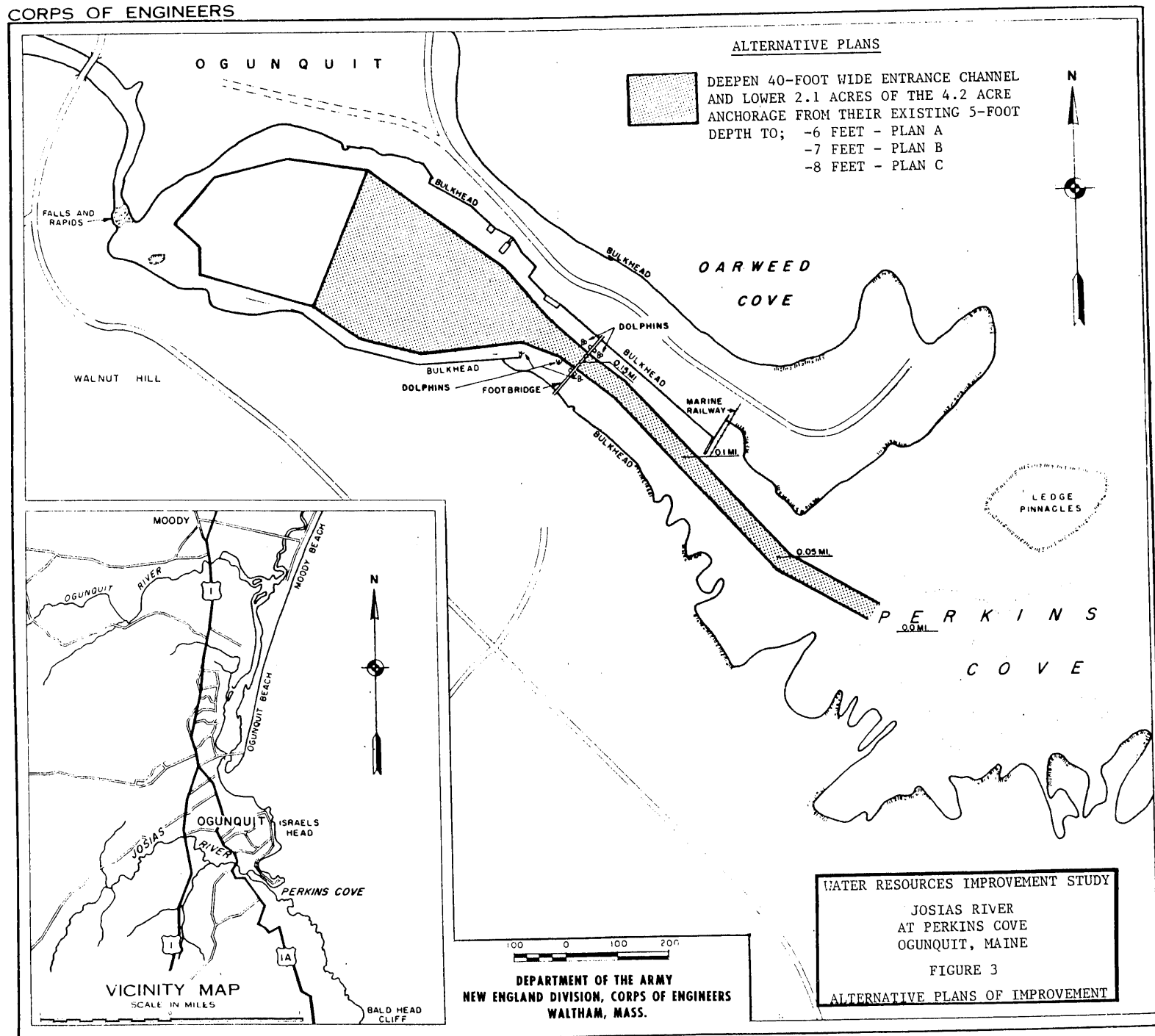
Wells Harbor, 9 miles north of Perkins Cove, is experiencing a severe shoaling problem which restricts the safe and efficient operation of vessels in that area. Swells which break across the entrance to the channel make entry hazardous even during a moderate sea. Due to the shoaling problem large parts of the anchorage are not accessible for two hours during low tide. A reconnaissance report completed by the Corps in 1979 shows the impracticality and danger in trying to increase the current fleet size.

York Harbor, located 10 miles south of Perkins Cove, could not accommodate the transfer of large fishing vessels. The present commercial and recreational fleets fill the existing anchorage during the summer. Expansion of the present fleet would cause overcrowding and result in increased damage and delays. Existing public shore facilities for commercial boats are not sufficient to handle an increased fleet.

Cape Porpoise, 18 miles north, also experiences severe overcrowding during the summer months. The harbor lacks the excellent degree of protection provided by Perkins Cove and is an impractical location in which to conduct increased year-round commercial operations.

Analysis of preliminary alternatives led to the conclusion that the most feasible solution to the present navigation problems at Perkins Cove would be to increase the depth of the existing channel and 2.1 acres of the existing anchorage. Selected for further analysis were three alternative depths below the present project depth of five feet below MLW. The alternative depths are 6, 7 and 8 feet below MLW. These alternatives have been designated Plans A, B and C respectively.

CORPS OF ENGINEERS



4.0 COMPARISON OF DETAILED PLANS

The three detailed plans each differ in benefits, costs, and the amount of dredging. Each plan entails a different depth of dredging within the the same defined harbor area of 2.1 acres in the anchorage and the 40-foot by 900-foot channel. 2.1 acres was determined to be the minimum area of accommodating the existing commercial and charter boat fleets. Plan A provides a 6-foot project depth, Plan B a 7-foot depth, and Plan C an 8-foot depth. In addition, the costs of upland disposal versus open ocean disposal have been investigated.

The effects on the marine environment at the dredge site with each plan are similar but increase in scope as the dredging depth and volume increases from Plan A to C, as shown in Table 1. The impacts of Plan A are also lessened by not having to remove rock which eliminates the impact of drilling and blasting. For all plans the material to be removed is to be disposed at either an upland disposal site provided by the town of Ogunquit or at an approved ocean disposal site south of Cape Arundel, Maine.

4.1 Project Costs

Dredging of material under each plan would be accomplished by a barge mounted mechanical dredge. All material will be dredged from the channel and anchorage and then either off-loaded onto the north bank of the entrance channel prior to upland disposal or transferred to a barge for transport to the ocean disposal site. For the upland site disposal operation, a front end loader will be used to load the material onto trucks for transport approximately 2 miles to the disposal site. Plans B and C would require drilling and blasting of rock ledge after dredging the ordinary overburden material. Costs and annual charges are directly related to the volume and type of material to be removed, increasing as the dredging depth increases.

Tables 2 and 3 compare the construction and maintenance costs associated with each of the three alternative plans. Table 2 displays costs with upland disposal and Table 3 displays costs with the ocean disposal option. A more detailed cost breakdown is provided in Appendix 2. Annual amortization charges were computed at a rate of $8 \frac{5}{8}$ percent over a 50-year project life.

Due to the rocky nature of the headlands abutting the outer cove to either side, an increase in sedimentation is expected to be negligible. None of the proposed improvements would, if implemented result in an increase in the frequency or extent of necessary maintenance operations. Therefore, no increased operation and maintenance costs will be incorporated into the annual cost of the alternatives.

4.2 Project Benefits

Each of the three alternative plans provides varying degrees of benefits to commercial and recreational boating interests as shown in the summary breakdown of annual project benefits provided in Table 4.

Commercial benefits are derived from reductions in delays for fishing vessels both while at anchor and while underway, resulting in reduced operating (fuel and labor) costs; reduction in damages to vessel from

TABLE 1
PERKINS COVE, MAINE
DESCRIPTION OF DETAILED PLANS

<u>FEDERAL PLAN DESCRIPTION</u>	<u>PLAN A</u>	<u>PLAN B</u>	<u>PLAN C</u>
Channel - depth (ft below MLW)	6	7	8
- length (ft)	800	800	800
- width (ft)	40	40	40
Anchorage - depth (ft below MLW)	6	7	8
- area (acres)	2.1	2.1	2.1
Dredge Quantity (cy)			
rock	0	200	1,000
ordinary material	12,400	19,700	26,900
Total Dredging Quantity (cy)	12,400	19,900	27,900
Construction Duration (weeks)	4	6	10

MLW - mean low water

cy - cubic yards

TABLE 2
PERKINS COVE, MAINE
COSTS OF DETAILED PLANS
WITH UPLAND DISPOSAL

	<u>PLAN A</u>	<u>PLAN B</u>	<u>PLAN C</u>
<u>CONSTRUCTION COSTS</u>			
Mobilization/Demobilization	\$ 23,000	\$ 34,000	\$ 34,000
*Dredging	162,000	266,000	423,000
Contingencies	37,000	60,000	91,000
Engineering and Design	30,000	30,000	30,000
Supervision and Admin.	<u>41,000</u>	<u>50,000</u>	<u>48,000</u>
SUBTOTAL	\$293,000	\$440,000	\$626,000
Disposal	<u>\$116,000</u>	<u>\$185,000</u>	<u>\$259,000</u>
TOTAL FIRST COST	\$409,000	\$625,000	\$885,000
Construction Period (months)			
Interest During			
Construction	<u>1,000</u>	<u>1,000</u>	<u>5,000</u>
TOTAL INVESTMENT	\$410,000	\$626,000	\$890,000
<u>ANNUAL CHARGES **</u>			
Interest and Amortization	\$35,400	\$54,000	\$76,800
(8 5/8 % for 50 years)			
SAY	\$35,000	\$54,000	\$77,000

* For a more detailed cost estimate see Appendix 2.

** It was determined that no increase in annual operation and maintenance would result from the implementation of any of the alternatives.

TABLE 3
PERKINS COVE, MAINE
COSTS OF DETAILED PLANS
WITH OCEAN DISPOSAL

	<u>PLAN A</u>	<u>PLAN B</u>	<u>PLAN C</u>
<u>CONSTRUCTION COSTS</u>			
Mobilization/Demobilization	\$ 23,000	\$ 34,000	\$ 34,000
* Dredging	162,000	266,000	424,000
Contingencies	37,000	60,000	91,000
Engineering and Design	30,000	30,000	30,000
Supervision and Admin.	<u>41,000</u>	<u>50,000</u>	<u>48,000</u>
SUBTOTAL	\$293,000	\$440,000	\$626,000
Disposal	<u>\$ 51,000</u>	<u>\$ 77,000</u>	<u>\$129,000</u>
TOTAL FIRST COST	\$344,000	\$517,000	\$755,000
Interest During Construction	<u>1,000</u>	<u>1,000</u>	<u>4,000</u>
TOTAL INVESTMENT	\$345,000	\$518,000	\$759,000
<u>ANNUAL CHARGES **</u>			
Interest and Amortization (8 5/8 % for 50 years)	\$29,800	\$44,700	\$65,500
SAY	\$30,000	\$45,000	\$66,000

* For a more detailed cost estimate see Appendix 2.

** It was determined that no increase in annual operation and maintenance would result from the implementation of any of the alternatives.

TABLE 4
PERKINS COVE, MAINE
ANNUAL BENEFITS OF DETAILED PLANS

	PLAN A	PLAN B	PLAN C
<u>JOINT-USE RECREATIONAL BENEFITS</u>			
Net Increase in Unit Day Value			
-Charter Fleet	\$22,700	\$45,900	\$46,600
-Private Fleet	500	800	900
TOTAL	\$23,200	\$46,700	\$47,500
<u>COMMERCIAL BENEFITS</u>			
Charter Boat			
Grounding Damages Prevented	\$10,400	\$17,400	\$19,100
Fishing Fleet - Reduction in Delay and Grounding Costs	34,500	41,100	44,700
TOTAL	\$44,900	\$58,500	\$63,800
TOTAL ALL BENEFITS	\$68,100	\$105,200	\$111,300
PERCENT RECREATION	34	44	43
PERCENT COMMERCIAL	66	56	57

grounding; and reduction in damages to lobster holding cages in the anchorage area. Similar commercial benefits accrue to the operators of commercial charter boats.

Recreational benefits are based on an increase in recreation value with the improved accessibility provided by increased depth in the channel and anchorage area for both the passengers of the charter boat fleet and the private recreational fleet based on the unimproved upper basin.

4.3 Comparison Summary

A summary of project benefits compared to project costs for the three alternative plans, with upland disposal and ocean disposal options is shown in Table 5. A detailed discussion is provided in Appendix 3.

TABLE 5
PERKINS COVE, MAINE
ECONOMIC IMPACTS

	<u>PLAN A</u>	<u>PLAN B</u>	<u>PLAN C</u>
<u>ANNUAL BENEFITS</u>			
a) Commercial & joint-use rec.	\$68,000	\$105,000	\$111,000
b) Commercial only	\$45,000	\$159,400	\$ 64,000
<u>ANNUAL COSTS</u>			
c) With upland disposal	\$35,000	\$54,000	\$77,000
d) With ocean disposal	\$30,000	\$45,000	\$66,000
<u>BENEFIT TO COST RATIO</u>			
Commercial & joint-use recreational with upland disposal (a/c)	1.9	1.9	1.4
Commercial with upland disposal (b/c)	1.3	1.1	0.8
Commercial & joint-use recreational with ocean disposal (a/d)	2.3	2.3	1.7
Commercial with ocean disposal	1.5	1.3	0.8
<u>NET BENEFITS</u>			
Upland disposal (b-c)	\$33,000	\$51,000	\$34,000
Ocean disposal (b-d)	\$38,000	\$60,000	\$45,000

5.0 ASSESSMENT AND EVALUATION OF DETAILED PLANS

This section analyzes the three improvement alternatives selected for detailed study. Evaluation of the alternatives was based on their impacts on the environment, existing navigation, and social and cultural resources of the study area. The economic costs and benefits of project implementation have also been analyzed. Table 1 provides a comparison of the different features and varying impacts of the three plans.

5.1. Dredging Impacts

Dredging operations cause both short-term and long-term impacts. Short-term impacts are related to construction activity and include a temporary increase in turbidity, a temporary release of objectionable odors when the dredged material is exposed to air, explosion impacts to fish during blasting of rock ledge and the noise impacts generated by construction equipment. Using a mechanical dredge will result in minimum disturbance of the material being removed. Bulk chemical and elutriate test results of the sediments to be dredged revealed no significant concentration or release of the chemical contaminants tested.

Removal of the dredged material may result in an objectionable sulfurous "rotten egg" odor. This odor is a natural product of the anaerobic bacterial breakdown of organic material in the bottom sediment. Any sewage contamination in the organic material may also generate odor when exposed to the air. Sediment testing has indicated that the material contains considerable sand and gravel with little organic material so that odors should be minimal and temporary.

Any removal of rock ledge will require underwater drilling and blasting. The overpressures generated by each explosion may result in up to 50% mortality of the fish within 30 meters of the blast site. The limited amount of rock to be removed and the seasonal timing of the blasting should minimize this impact.

Construction activity will produce localized noise at the cove and along the route to the disposal site. Blasting noise should be minimal as the explosives are to be placed in bore holes in the rock and the overlying water will act to further buffer each explosion. Equipment noise impacts should also be minimized by scheduling the work activity during the winter months when the local population level is lowest. The winter schedule and working only during daylight hours should also minimize the disruption of local businesses and traffic in this seasonal resort area.

Long-term impacts include removal of benthic organisms within the dredge sediments and possibly changing the physical character of the harbor and channel bottom. Removal of benthic organisms is an unavoidable result of dredging, but mobile species such as lobsters, crabs and finfish should readily repopulate the area.

5.2. Disposal Impacts

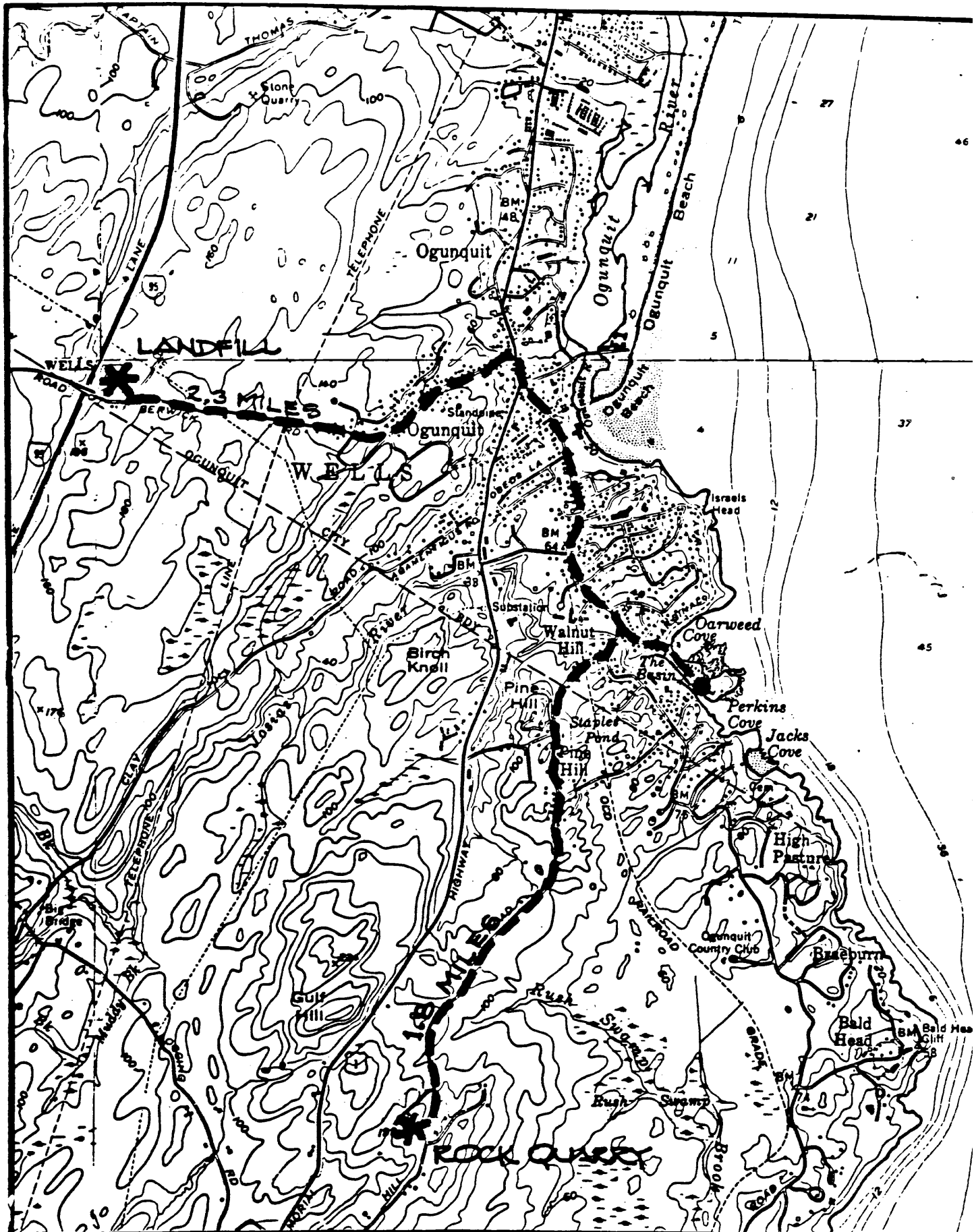
The material which would be dredged from Perkins Cove is to be removed by a barge-mounted mechanical dredge and placed on a deck barge for transport to the area of the town landing. Here the material will either be placed on the adjacent shore for dewatering and temporary storage prior to upland disposal or transferred to a dump scow for ocean disposal. Under the upland disposal option, the material will then be placed in trucks and hauled to one of two upland disposal sites to be provided by the town of Ogunquit. The first site is a privately owned stump dump which has been used for that purpose for several years. The location is 2.7 miles west of the project (see Figure 4). The second site is an inactive granite quarry in York, Maine, 1.8 miles south of the project. Both areas have more than adequate capacity for the material to be removed from Perkins Cove. In either case, the material would be leveled and seeded to prevent erosion.

Under the ocean disposal option, the material will be transported by dump scow to the Cape Arundel disposal site, located approximately three miles south of Cape Arundel, Maine, seven nautical miles northeast of Perkins Cove (Figure 5).

While Federal agencies expressed no concern with upland disposal, the Maine Department of Environmental Protection indicated that the presence of PCB's requires that for upland disposal the material can only be placed in an approved landfill having a Class II waste disposal license. Neither upland site proposed by the town is so licensed, and it is highly unlikely that the town will be willing to obtain such a license. The state of Maine Department of Environmental Protection has no objection to ocean disposal at the Cape Arundel site. Therefore, ocean disposal is the recommended method. Ocean disposal will also have less social impact than hauling the dredge material by truck through town and will be less costly.

5.3 Economic Impacts

The economic impacts of the three alternative plans were evaluated for costs and benefits. The cost estimates (Table 2), as described in detail in Appendix 2, are based on the following factors: the quantity and type of dredged material, disposal costs, contractor mobilization and demobilization costs, equipment costs, contractor profit, project design (engineering and supervision) and administrative costs and contingencies. Charges for interest during construction (IDC) have been computed for the purpose of comparing benefits to costs and are not included in the cost apportionments.



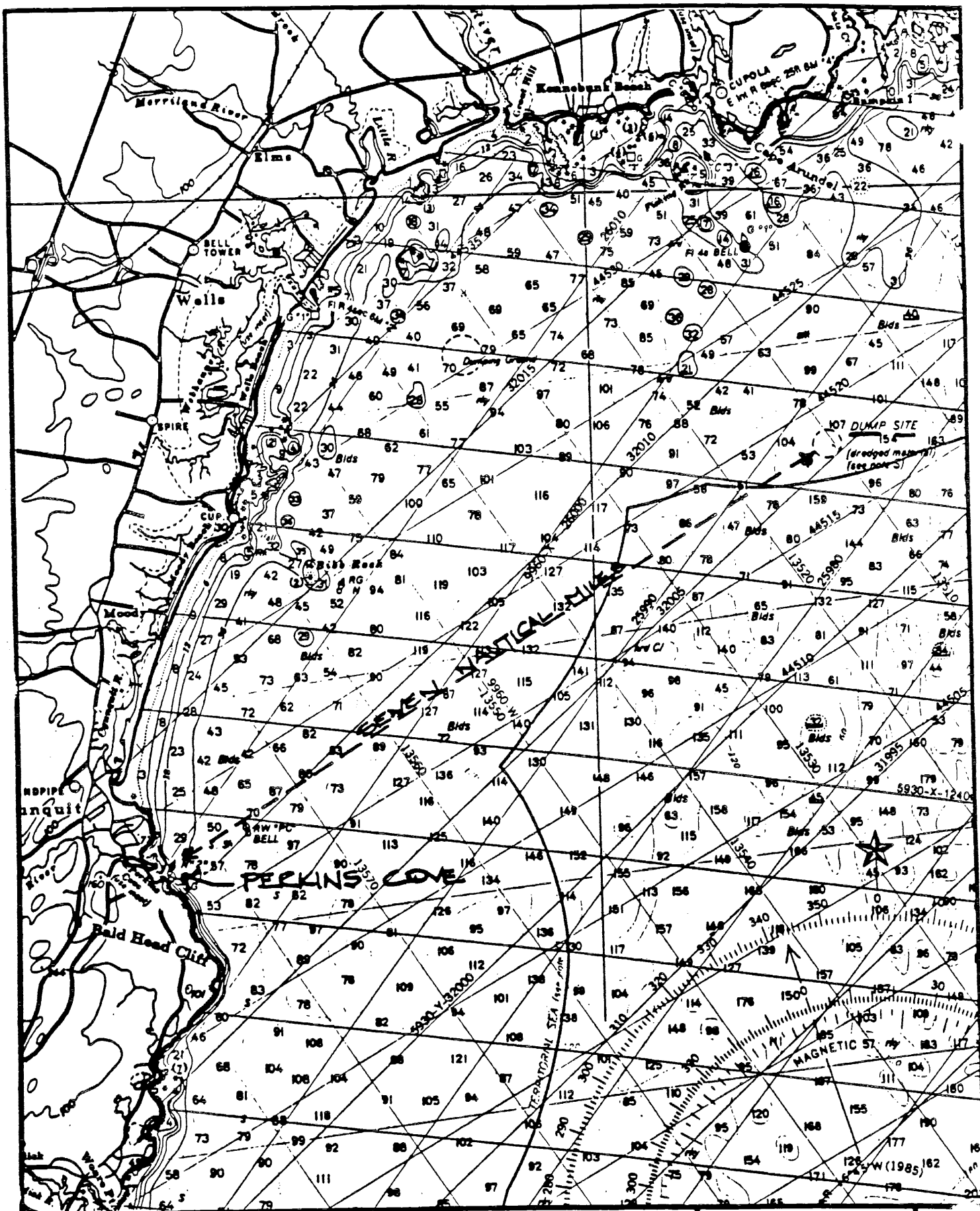
PERKINS COVE

SCALE 1:24,000



UPLAND DISPOSAL SITES
LOCATION MAP

FIGURE 4



PERKINS COVE

SCALE 1:80,000



CAPE ARUNDEL
OCEAN DISPOSAL SITE LOCATION MAP

FIGURE 3

For the purpose of determining the benefit to cost ratio, costs have been calculated to an annual cost over a 50-year amortization period using an interest rate of 8 5/8 percent.

The benefits of the proposed plans of improvement, as described in detail in Appendix 3, have been based on the following assumptions:

- o Elimination of tidal delays due to inadequate depths at low tide would result in decreased labor and fuel costs for harvest of the existing catch.
- o Increasing channel and anchorage depth would reduce grounding damages for vessels with a draft of 4 feet or greater.
- o Benefits to the existing recreational and commercial fleets would occur immediately following implementation of improvements.
- o Alternative plans will not affect harvest rates or prices for commercial fish. Benefits result from a reduction in harvesting costs for the existing level of catch.

6.0 SELECTION OF A PLAN

6.1 The Selected Plan

The selected plan for navigation improvements at Perkins Cove, Ogunquit, Maine, has been based on consideration of economic efficiency, minimization of environmental impacts, navigational safety and the needs and objectives of local and state governments. Based on these criteria, Plan B results in the greatest net benefits and provides the most favorable plan for meeting the project objective of reducing navigation hazards and delays. The selected plan will increase the depth of 2.1 acres of the 4.2-acre anchorage area from a depth of five feet below MLW to 7 feet. The project will also increase the depth of the 40-foot wide by approximately 900-foot long access channel from -5 feet (MLW) to -7 feet.

The selected plan would require the removal of 200 cubic yards of rock and 11,700 cubic yards of ordinary material. The material would be dredged by mechanical dredging after blasting of bedrock. Disposal of the material would be at an ocean disposal site approximately 2.75 miles offshore of Cape Arundel, Maine.

The first cost of construction for the selected plan is estimated to be \$326,000. For the purposes of benefit to cost analysis, the charges for interest during construction would amount to \$1,000. The total investment cost would then be \$327,000. Based on October 1989 price levels, annual benefits total \$113,000 for commercial and joint-use recreational boating interests. These benefits, when compared to a 50-year amortized annual cost of \$29,000, yield a benefit-cost ratio of 3.9 with joint-use recreation benefits and commercial benefits combined, and a benefit-cost ratio of 2.2 for commercial benefits alone.

The selected plan is not anticipated to increase maintenance dredging volumes or frequency. This is due to the rocky, confined nature of Perkins Cove and the lack of evidence in the outer cove.

6.2 Implementation Responsibilities

6.2.1 Cost Apportionment

The Federal and local cost sharing responsibilities for the first cost of construction, as stipulated in the Water Resources Development Act of 1986 (Public Law 99-662, Section 103(c)4), require that the local sponsor contribute at least 33% (\$108,000) of the first cost of construction. At least 27.5% (\$90,000) of the first cost is to be paid during the construction period, and 5.5% (\$18,000) may be paid over 30 years. The remaining share of the first cost is the Federal contribution.

These percentages were determined first by calculating percentages of project benefits that were commercial versus joint-use recreational (56% vs. 44%). Secondly, they were multiplied by the WRDA of 1986 stipulated 20% local cost share for commercial projects and 50% for recreational (See Table 6 for 4 Detailed Description Cost Apportionment).

6.2.2 Federal Responsibilities

The Federal responsibilities include preparation of plans and specifications, and contract advertisement, award and supervision. Federal responsibility also only includes the dredging and maintenance of the designated Federal channel and anchorage areas, and does not include any berthing facilities, shoreline protection or site work at upland disposal areas.

The total Federal expenditures for construction and operation and maintenance under the Section 107 authority are administratively limited to the greater of \$4,500,000 or 2.25 times the Federal costs of the project, including costs for the reconnaissance through the construction phases. These expenditures are computed on a present worth basis starting with the date the sponsor accepts the project.

TABLE 6
PERKINS COVE, MAINE
COST APPORTIONMENT

PLAN B

FIRST COST \$326,000

PERCENTAGES

COMMERCIAL:	56%	X	20%	=	11%
	(% of benefits that are commercial)		(As stipulated in WRDA)		

RECREATIONAL:	44%	X	50%	=	<u>22%</u>
	(% of benefits that are recreational)		(As stipulated in WRDA)		33%

LOCAL SHARE: 33% OR \$108,000

FEDERAL SHARE: 67% OR \$218,000

LOCAL PAYMENT:

RECREATIONAL %	22
+ 1/2 COMMERCIAL %	<u>5.5</u>
	\$27.5% up-front (\$90,000)

REMAINING 5.5% OVER TIME (\$18,000)

6.2.3 Non-Federal Responsibilities

In accordance with current policies and existing statutes, the following is a list of items of local cooperation required for projects authorized under Section 107. The local sponsor must provide assurance that they intend to meet these items prior to project authorization.

1. Assume full responsibility for all non-Federal costs associated with the project. Current law requires that the non-Federal sponsor provide at least 33% of the first cost of construction of General Navigation facilities not exceeding 20 feet in depth.

2. Provide, maintain and operate without cost to the United States, an adequate public landing open and available to use for all on an equal basis.
3. Provide without cost to the United States, all necessary lands easements and rights of way necessary for project construction and subsequent maintenance, and acceptable disposal areas.
4. Hold and save the United States free from damages that may result from construction and maintenance of the project.
5. Provide and maintain mooring facilities as needed for transient and local vessels as well as necessary access roads, parking areas and other needed public use shore facilities open and available to all on an equal basis. Only minimum basic facilities and services are required as part of the project. The actual scope or extent of facilities and services provided over and above the required minimum is a matter of local decision. The manner of financing such facilities and services is a local responsibility.
6. Assume full responsibility for all project costs in excess of the Federal cost limitation of \$4,000,000. The Federal cost limitation includes prior construction costs and all investigations, planning, engineering, supervision, inspection, and administration involved in the development and construction of the project.
7. Federal navigation projects must be managed in the general public interest and must be accessible and available to all on equal terms. Any number of approaches may be used to assure that all citizens desiring mooring or other access to the projects are treated impartially; it is not the Federal Government's intention to prescribe specific procedures. A management system shall be considered acceptable provided that it:
 - Makes no arbitrary distinction or requirement of any kind in allocating use of the project and ancillary facilities and services to the public except as may be consistent with the purpose for which the project was constructed.
 - Does not impose arbitrary fees or arbitrary variations in fees among users. The cost of providing necessary management and ancillary facilities and services may be offset through equitable user fees based on the actual costs incurred.
 - Provides information pertinent to harbor management - including but not limited to rules and regulations, lists of mooring holders, waiting lists and fee schedules - that is readily available to the public at all times.

6.3 Conclusion

The New England Division, Corps of Engineers, has reviewed and evaluated all pertinent data concerning the proposed plan for improving navigation at Perkins Cove. The Corps has also reviewed and evaluated the stated views of interested agencies and concerned public regarding the alternative plans. The possible consequences of each alternative have been evaluated on the basis of engineering feasibility, environmental impact and economic efficiency.

We find substantial benefits are to be derived by providing the commercial fishermen and recreational boaters with reliable and safe access to the facilities and anchorages in Perkins Cove. Although the proposed improvement would cause a minor disruption of the environment during dredging and disposal operations, these are not considered significant. On that basis an environmental assessment has been prepared. Due to the significant benefits attributable to both the commercial fishing and recreational boating industries, any effects are considered to be offset by the improvement and the resulting overall economic growth of the region.

The recommended plan, Plan B, would result in the greatest economic net benefits and is therefore the NED Plan. This Plan would deepen the present channel and anchorage to 7 feet below mlw. Disposal of dredged material would be at the Cape Arundel Ocean Disposal Site, located 2-3/4 miles offshore of Cape Arundel, 7 nautical miles northeast of Perkins Cove.

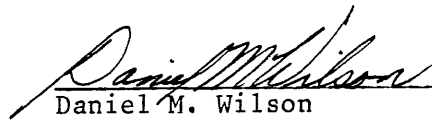
The total non-Federal cost for construction of this project is \$108,000. It is reasonable to expect that ample funds will be available to satisfy the non-Federal sponsor's financial obligation for the project.

7.0 RECOMMENDATIONS

I recommend that the existing Federal navigation project at Josias River, Perkins Cove, Ogunquit, Maine, under the authority of Section 107 of the River and Harbor Act of 1960, as amended, be modified in accordance with the Plan selected herein, Plan B, with such further modifications thereto as in the discretion of the Chief of Engineers may be advisable. I also recommend that the Division Engineer be delegated authority to approve Plans and Specifications.

I have considered all significant aspects in the overall public interest including environmental, economic, and social effects, and engineering and financial feasibility in concluding that the NED plan of improvement described herein is the best implementable alternative achieving the objectives of this investigation subject to financial commitment.

The recommendations contained herein reflect the information available at this time and current Departmental policies governing formulation of individuals projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are authorized for implementation funding.


Daniel M. Wilson
Colonel, Corps of Engineers
Division Engineer

ENVIRONMENTAL ASSESSMENT
FINDING OF NO SIGNIFICANT IMPACT
SECTION 404 (b)(1) EVALUATION

FOR THE PROPOSED
NAVIGATION IMPROVEMENT DREDGING
AT PERKINS COVE
OGUNQUIT, MAINE

PREPARED BY
ERNEST R. WATERMAN
Geologist
and
CATHERINE J. DEMOS
Biologist

Department of the Army
New England Division, Corps of Engineers
Waltham, Massachusetts 02254

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Environmental Assessment
Navigation Improvement Dredging
Perkins Cove, Ogunquit, Maine

A. PURPOSE AND NEED

1. Purpose and Need

Perkins Cove, in the town of Ogunquit, is located on the southeastern coast of Maine, about 33 miles southwest of Portland (Fig. EA-1). Ogunquit, formerly a self-governing village corporation within the town of Wells, became an established town in 1980. The Cove forms a small, well-protected harbor which serves as home port to the commercial fishermen of the town. The social and economic well being of the town is dependent upon the continued vitality of the harbor.

A deeper access channel and a deeper anchorage area are needed if the navigational needs of the community are to be met. These improvements are needed to provide adequate depth for the new larger commercial fishing vessels. These vessels are replacing the aging fishing boats now gradually leaving the fleet.

The trend toward larger commercial fishing vessels necessitates increasing the depth of the anchorage area and entrance channel. Inadequate depth has resulted in lost fishing time, reduced landings, and increased labor and fuel costs caused by tidal delays. Damages due to groundings have also increased as additional deeper draft vessels are added to the fleet.

2. Authority

The authority for this study is contained in the provisions of Section 107 of the 1960 River and Harbor Act, as amended. In a letter dated 8 May 1981, the town of Ogunquit officially requested that the Corps of Engineers study the feasibility of Federal participation in improving navigation conditions in the Josias River and Perkins Cove under existing continuing authorities for small navigation projects.

3. Maintenance History

The existing Federal project was authorized on 2 March 1945 and modified on 3 July 1958. It includes an access channel which is 40 feet wide and 5 feet below mean low water (MLW). The channel extends from deep water in Perkins Cove to a 4.2 acre anchorage basin of the same depth located in the area of Flat Pond. The existing project was completed in March 1960.

During the winter of 1966-1967 approximately 5,500 cubic yards of material was removed from the channel and anchorage. The material was dredged hydraulically and pumped to the beach in Oarweed Cove.

Maintenance dredging was last performed in September 1976 when approximately 900 c.y. of sand and gravel were removed from a portion of the entrance channel and deposited on an upland site.

B. PROPOSED PROJECT DESCRIPTION

1. Dredging

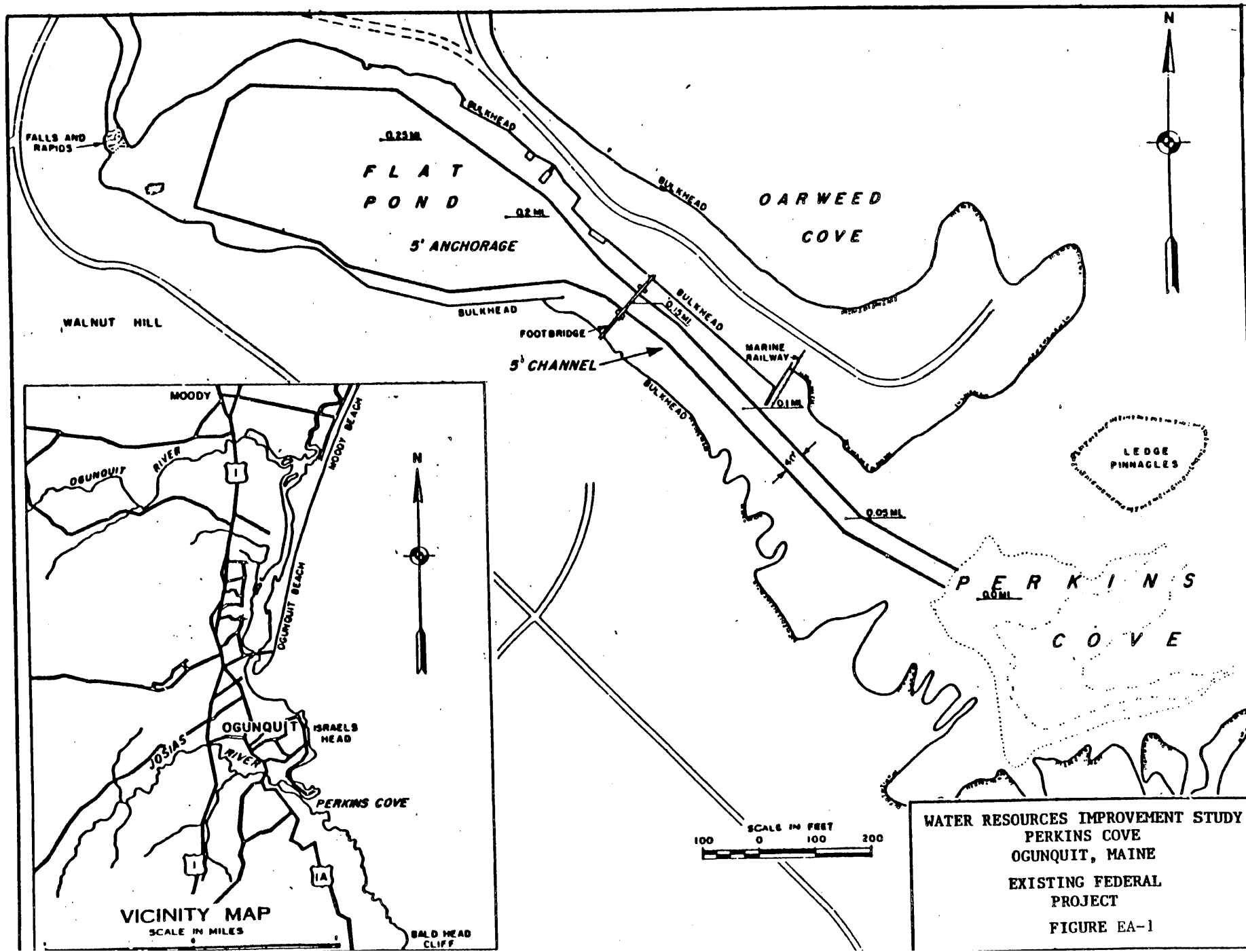
The proposed navigation improvements provide for the 900-foot long by 40-foot wide channel from deep water in Perkins Cove to the anchorage basin in Flat Pond to be deepened to -7 feet MLW. The channel will retain its present authorized width of 40 feet, which allows for safe one way traffic. The evaluated plan also provides for deepening the lower 2.1 acres of the existing authorized anchorage basin to -7 feet MLW without any alteration of the present authorized project limits (Fig. EA-1).

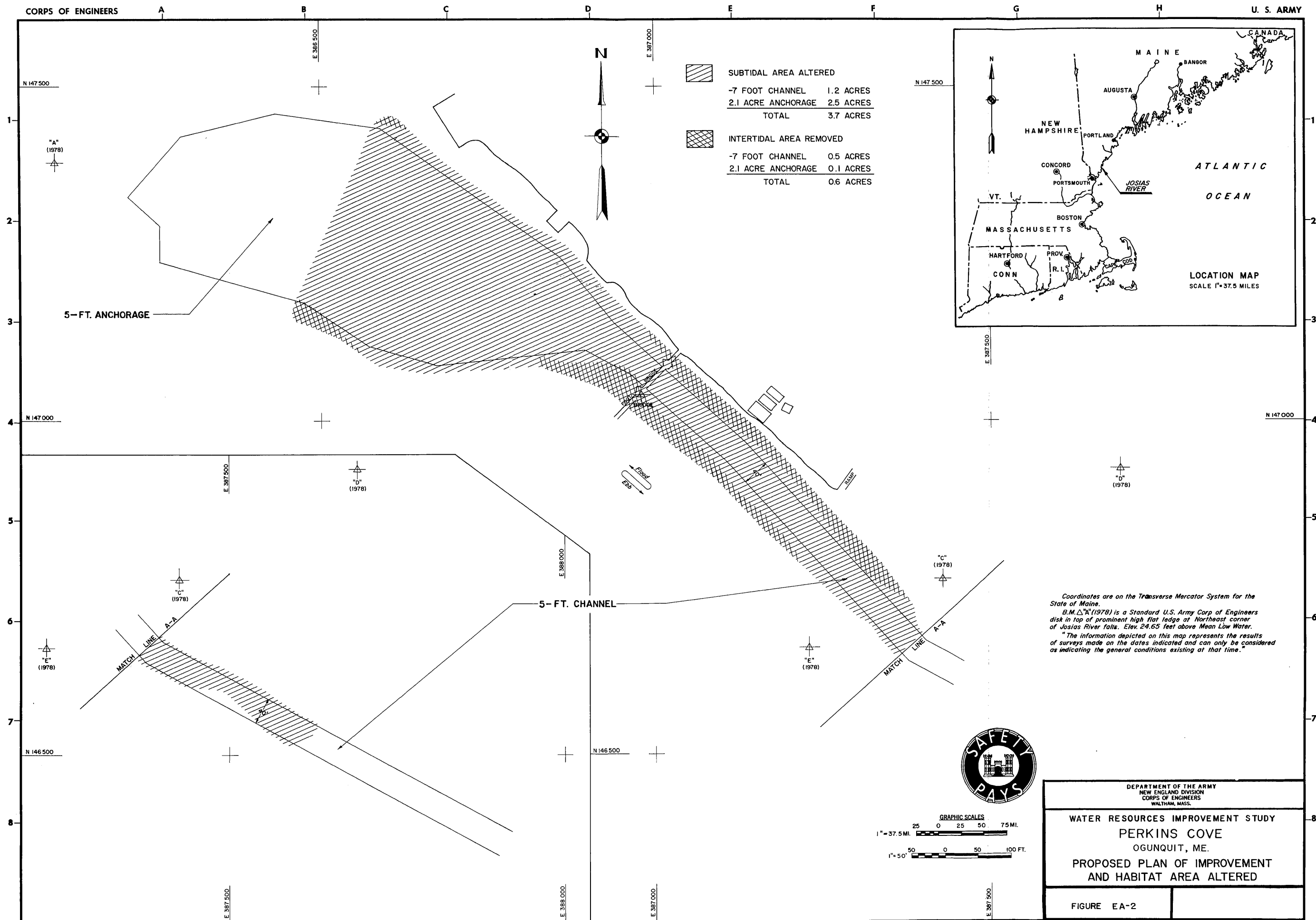
Based on previous probings, rock removal will probably not be necessary in the lower portion of the channel. Previous Corps improvements have involved ledge removal in this area. Under the evaluated plan, rock in the upper portion of the channel and the lower portion of the anchorage will need to be removed to a depth of -7 feet MLW plus a 2-foot overdepth yielding a total quantity of 200 cubic yards of rock. In addition, a total quantity of 19,700 cubic yards of sediment must be removed from the channel and lower portion of the basin to provide an overall depth of -7 feet MLW plus one foot of overdepth in those areas where material other than rock is encountered.

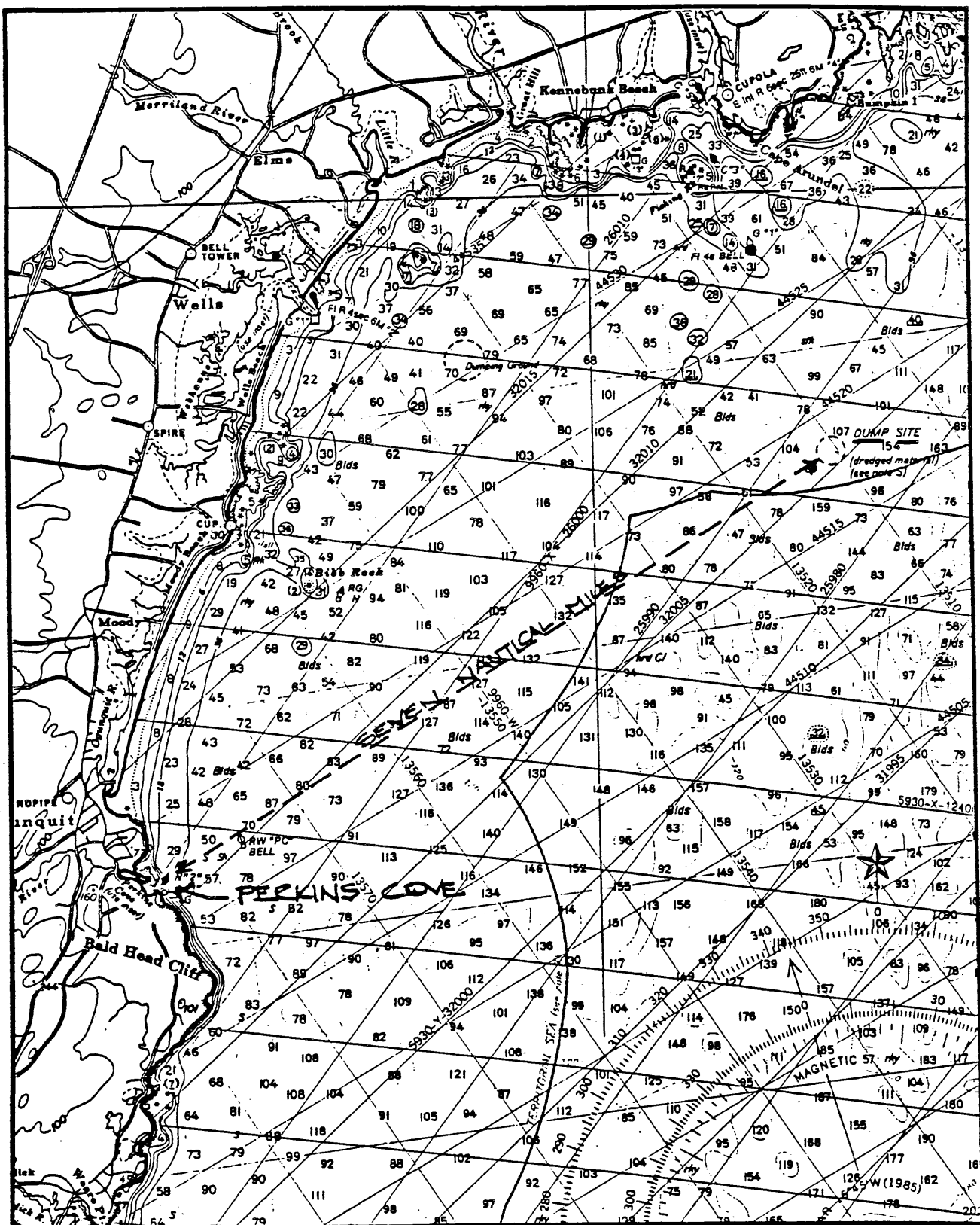
At the time of the preparation of this assessment, there is a possibility that there will be private dredging concurrent with Corps dredging. The town of Ogunquit has expressed an interest in maintenance dredging when the Federal project is dredged with disposal at CADS. Approximately 50 cubic yards of sediment from the floating pier, adjacent to the Federal project, will be dredged if the material is similiar to the Federal project material.

2. Disposal

Material dredged from Perkins Cove will be disposed of at the Cape Arundel Disposal Site (CADS). CADS is an EPA designated ocean disposal site located approximately seven nautical miles northeast of Perkins Cove (Figure EA-3). Offshore disposal requires the material to be mechanically dredged, and placed on a deck barge for transport through the 40-foot wide foot bridge. Once the barge has passed through the foot bridge, the material will be transferred to a larger dump scow and towed to CADS when the scow is loaded to capacity. Approximately eight weeks of construction are required to dredge and dispose of the material from Perkins Cove.







PERKINS COVE

SCALE 1:80,000



CAPE ARUNDEL
OCEAN DISPOSAL SITE LOCATION MAP

FIGURE EA-3

C. ALTERNATIVES

1. No Action

If no Federal action is taken at Perkins Cove, the present conditions will persist and current trends will likely continue. Depth limitations in the channel and basin will continue to discourage the use of vessels drawing greater than 3-1/2 to 4 feet. Boats of deeper draft now in the fleet will continue to experience grounding damages and delays due to tidal navigation. To eliminate these adverse effects without Federal action, either larger vessels must relocate their base of operations to a nearby port affording greater ease of navigation, or some party other than the Federal government must provide for the deepening of the entrance channel and a suitable portion of the basin at Perkins Cove.

As commercial fishermen leave the fleet, their moorings are being taken up by seasonal recreational vessels. Approximately six commercial fishing boats, within the past five years, have converted to other means of financial support (Harbormaster, per. comm. 1986). This keeps the seasonal combined fleet at a fairly constant level. However, this trend can lead to a lower level of activity and a decline in port economy since a year-round source of income to the community would be replaced by a seasonal source of income.

2. Dredging Options

The method of dredging is determined by (1) the type of material to be removed, (2) the size, geometry and depth of the area to be dredged, (3) the type of disposal to be used, and (4) the distance to the disposal site. Mechanical dredging requires more time than does hydraulic dredging and causes a larger turbidity plume at the dredge site.

At Perkins Cove only one method of dredging, mechanical (a bucket type dredge), is economically and physically feasible. This is due to the size of the channel, the rock and sand mix of material to be excavated, and the chosen method of ocean disposal.

3. Disposal Alternatives

Two upland sites were considered for the disposal of dredged material from Perkins Cove. One proposed site is an old quarry seeking fill material and another is a privately owned and operated landfill. The average distance to both sites from the project area is two to two and one-half miles. The presence of PCB's (even though the concentrations are low) in Perkins Cove places the sediment in the Class II category, according to the State of Maine DEP. Neither site is currently licensed to accept Class II material. This and the fact that upland disposal is more costly than ocean disposal precludes additional consideration of upland disposal.

Past maintenance operations have pumped materials across the parking area onto the shore at Oarweed Cove for beach nourishment. Because there will be blasting and rock removal involved, the dredged material will contain rock fragments which precludes beach disposal as an alternative.

4. Other Alternatives

Construction of breakwaters to protect a portion of Perkins Cove as a new anchorage was determined to be infeasible due to the high cost of construction for such structures in the water depths found in Perkins Cove. A similar plan was proposed in the 1958 survey report and not recommended because of the high cost of local involvement for constructing such structures.

A reorganization of mooring patterns in Perkins Cove basin could allow for a very limited increase in total fleet size but would not allow for deeper draft boats. This alternative would produce no effects on the natural environment.

D. AFFECTED ENVIRONMENT

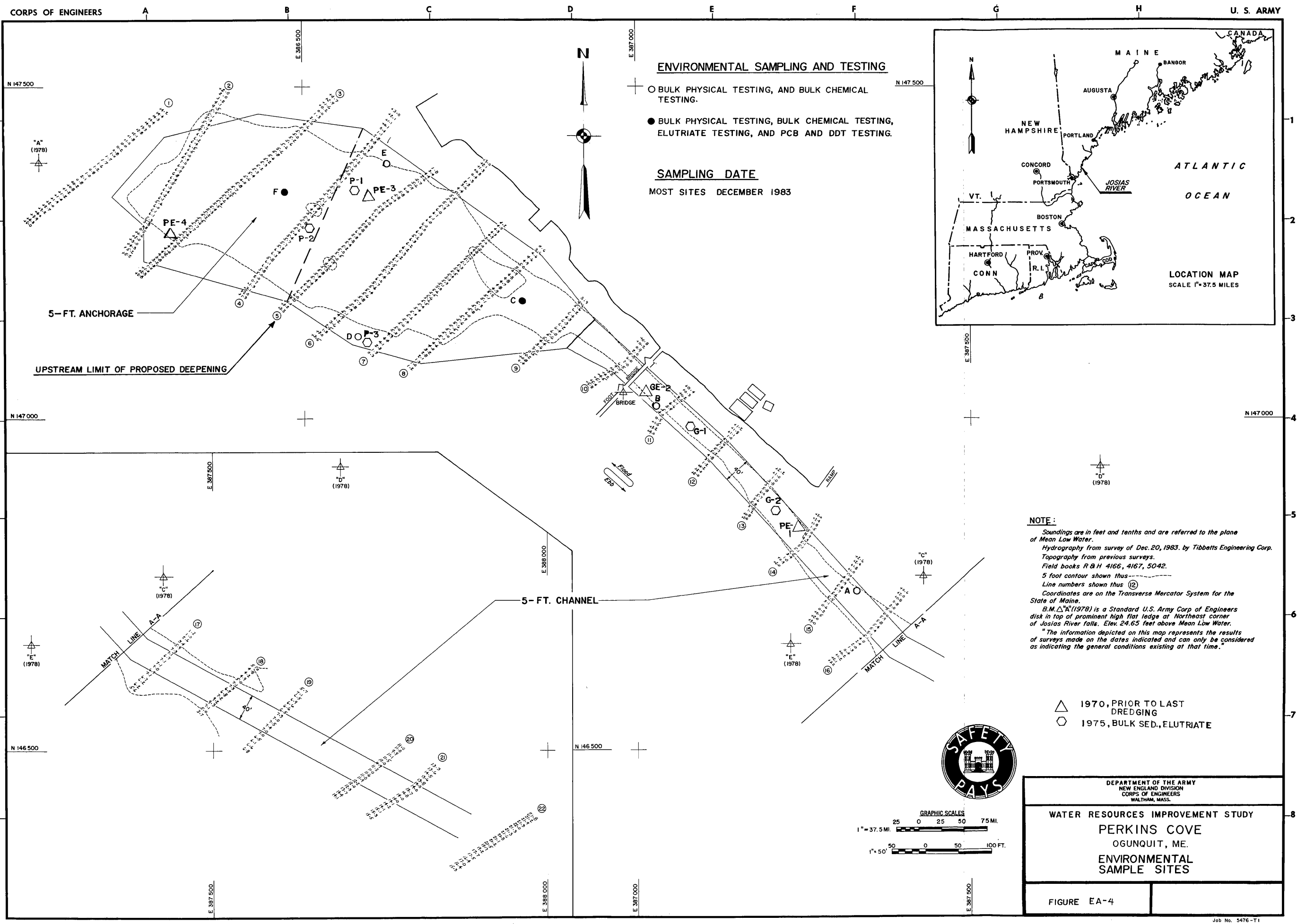
1. Dredging Site

a. Physical & Chemical

The Josias River flows into the northern end of Perkins Cove. Originally the Josias River flowed into Oarweed Cove after meandering across the Flat Pond marsh. Local interests changed the river's course so that it emptied into Perkins Cove through a channel cut across the bar between the former Adams Island and the mainland to the west. The old channel was filled and eventually became the site of the present day pier. The tidal range in the project area has a mean of 9.7 feet.

During 6-9 September 1983, sediment sampling for this study was performed at six locations (Fig. EA-4) within Perkins Cove. Five of the samples were surface grab samples with a core sample taken at Station "E" only. The bottom sediments in the proposed dredge area range from sandy-gravel to silty sand and sandy silt. The sediment from locations "D", "E", and "F" within the anchorage basin is predominantly silt. However, there is also considerable sand (35% - 48%) present at these stations. The material from the other locations mainly consists of sand and gravel. Station "F" is located in the northwestern portion of the anchorage basin, outside of the proposed improvement area (see Appendix 2).

Comparisons to previous data were made using locations "B" and "E". They were in close proximity to locations sampled in 1970 and 1975, locations sampled prior to dredging in 1976 (Figure EA-4). Results show lower chemical concentrations in 1983 than earlier data (Table 1). In vicinity of "B", the material appears to have become progressively more gravelly.

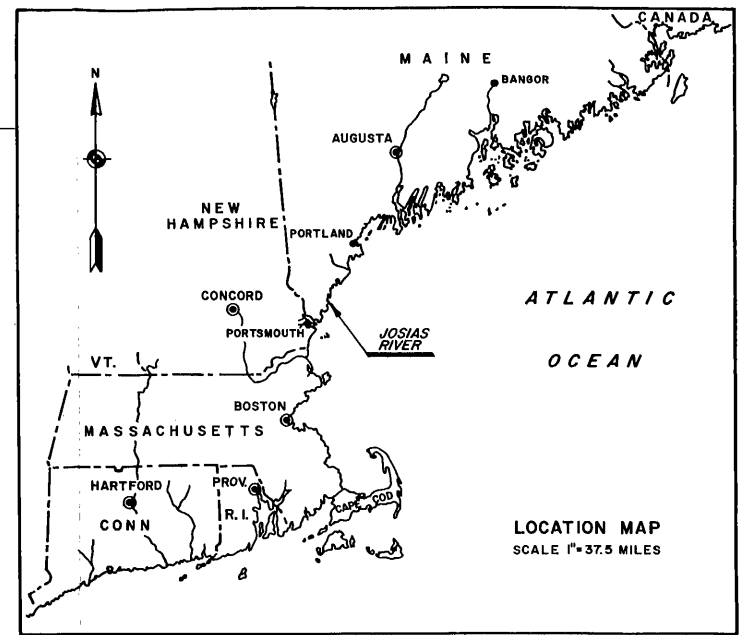


ENVIRONMENTAL SAMPLING AND TESTING

- BULK PHYSICAL TESTING, AND BULK CHEMICAL TESTING.
- BULK PHYSICAL TESTING, BULK CHEMICAL TESTING, ELUTRIATE TESTING, AND PCB AND DDT TESTING.

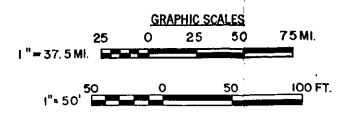
SAMPLING DATE

MOST SITES DECEMBER 1983



NOTE:
Soundings are in feet and tenths and are referred to the plane of Mean Low Water.
Hydrography from survey of Dec. 20, 1983, by Tibbatts Engineering Corp.
Topography from previous surveys.
Field books R & H 4166, 4167, 5042.
5 foot contour shown thus ---
Line numbers shown thus (12)
Coordinates are on the Transverse Mercator System for the State of Maine.
B.M. Δ (1978) is a Standard U.S. Army Corp of Engineers disk in top of prominent high flat ledge at Northeast corner of Josias River falls. Elev. 24.65 feet above Mean Low Water.
The information depicted on this map represents the results of surveys made on the dates indicated and can only be considered as indicating the general conditions existing at that time.

- △ 1970, PRIOR TO LAST DREDGING
- 1975, BULK SED., ELUTRIATE



DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	
WATER RESOURCES IMPROVEMENT STUDY PERKINS COVE OGUNQUIT, ME. ENVIRONMENTAL SAMPLE SITES	
FIGURE EA-4	

TABLE 1

Comparison Table
Perkins Cove, Josias River, Maine

Substance	1983 "B"	1975* GE-2	1970* G-1	1983 "E"		1975* PE-3		1970* P-1
	Surface	Surface	Surface	0.0-0.25 ft	1.05-1.30 ft	0.0-0.17 ft	1.0-1.2 ft	0.0-1.17 ft
COD, ppm	8,776	14,100	-	32,400	57,500	58,700	-	-
Hg, ppm	<0.05	3.5-	-	0.08	0.22	0.4	0.67	-
Pb, ppm	9	33	-	33	14	69	44	-
Zn, ppm	43	87	-	49	36	96	88	-
Cr, ppm	19	25	-	17	12	34	31	-
Cu, ppm	9	38	-	14	9	120	44	-
% Volatiles - NED	0.86	1.43	-	3.58	3.50	3.48	-	-
Classification	sandy gravel (GW)	gravelly sand (SP-SM)	silty sand (SP-SM)		sandy silt (ML)		sandy silt (OH)	sandy silt (OH)
% Fines	<1	5	8		65		64	60

* Sampled prior to dredging in 1976.

Standard elutriate tests were performed for the proposed work using sediments and water collected from Perkins Cove. The results from the 1983 testing are presented in Table 2. The EPA standards, against which the results of the elutriate test are measured to assess the materials potential impacts on water quality, are listed in Table 3. In every case with one exception for PCB, comparison of results for released constituents into the water was less than its related water quality criteria.

The ambient water concentration for PCB's at location "F", which is outside the proposed improvement area, is slightly (0.011 ppb) above EPA criteria. However, the elutriate test results are below this level indicating adsorption of PCB to the sediment particles. The above results indicate no significant release of contaminants to the project site.

Generally, chemical concentrations in the sediment (Table 4) are low according to the State of Maine's preliminary sediment guidelines (Table 5). Class I material is coarse-grained sediment and may be acceptable for upland disposal as inert fill. This material may also be used for construction projects after dewatering.

Class II material is fine-grained sediment with moderate solids content. Class II material may be used as covering material or for disposal of at existing licensed landfills. The only parameters showing Class II concentrations are volatile solids at locations "D" and "F" and PCB's from locations "C" and "F". The sediment concentrations found in Perkins Cove are indicative of non-contaminated areas. In this regard, the proposed area to be dredged is considered to be non-degrading with respect to ocean disposal at CADS.

Water quality in Perkins Cove carries an SC designation which is satisfactory for recreational boating, fishing, and other similar uses except primary water contact. Dissolved oxygen content in SC waters should not be less than 5 ppm at any time. In a non-shellfish growing area such as Perkins Cove, the median number of coliform bacteria in a series of water samples should not exceed 1500 per 100 ml, and the median number of fecal coliforms should not exceed 300 per 100 ml. (Maine Dept. Environmental Protection - Classification of Surface Waters, 1979). High coliform levels have been previously reported in the water column in the cove. Water samples collected by the Dept. of Environmental Protection at Perkins Cove (John Sowles, Maine DEP, 3/20/84) show high fecal coliform densities from 1150 to 430 per 100 ml in the cove which indicates some effluent discharge. However, the tidal amplitude of 10 feet along with relatively high velocity tidal currents in the channel serves to flush the harbor and maintain adequate water quality.

b. Biological

A benthic survey was conducted on September 18, 1986 by NED personnel. Salinity, water temperature and other environmental parameters were measured (Table 6).

TABLE 2
ELUTRIATE TESTING - PERKINS COVE
DECEMBER 1983

Results of tests performed on: (1) the standard elutriate prepared from one part sediment taken at various sampling locations with four parts water from each sampling location and (2) the ambient water from each sampling location are as follows:

Test Property	Dredge Site Water	Standard Elutriate Designation and Sediment Depth Used in Preparation Location "C"			Dredge Site Water	Standard Elutriate Designation and Sediment Depth Used in Preparation Location "F"		
	"C"	Surface			"F"	Surface		
		R1	R2	R3		R1	R2	R3
Nitrate/Nitrite Nitrogen (N), ppm	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia nitrogen (N), ppm	0.71	2.82	1.39	1.50	0.45	1.25	1.11	1.11
Sulfate (SO ₄), ppm	3,580	3,490	2,840	3,120	3,580	3,310	3,770	3,580
Oil and grease, ppm	<2	<2	<2	<2	<2	<2	<2	<2
Phosphorus								
ortho, ppm	<0.02	0.04	0.03	0.03	<0.02	<0.02	<0.02	<0.02
total, ppm	0.05	0.07	0.06	0.05	0.05	0.04	0.03	0.03
Mercury (Hg), ppb	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Lead (Pb), ppb	<1	<1	<1	<1	<1	<1	<1	<1
Zinc (Zn), ppb	<10	<10	<10	<10	<10	23	<10	<10
Arsenic (As), ppb	<2	<2	<2	<2	<2	<2	<2	<2
Cadmium (Cd), ppb	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (Cr), ppb	3	3	3	2	2	<1	6	2
Copper (Cu), ppb	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5
Nickel (Ni), ppb	<4	<4	<4	18	21	10	11	<4
Silver (Ag), ppb	<0.6	1.1	0.6	0.7	<0.6	<0.6	1.1	1.1
Total PCB, ppb	0.028	<0.020	<0.020	<0.020	0.041	0.026	0.020	<0.020
Total DDT, ppb	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

TABLE 3
EPA WATER QUALITY CRITERIA (SALTWATER)

Contaminant	Any time	CMC ¹ 1 hr avg.	CCC ² 4 day avg.
Nitrate/Nitrite Nitrogen (N)	-	-	-
Sulfate	-	-	-
Oil & Grease	-	-	-
Total Phosphorus (P)	-	-	-
Mercury (Hg), ppb	-	2.1	0.025
Lead (Pb), ppb	-	140	5.6
Zinc (Zn), ppb	170	95	86
Arsenic (As), ppb	-	69	36
Cadmium (Cd), ppb	-	43	9.3
Chromium (Cr), ppb	-	1,100	50
Copper (Cu), ppb	-	2.9	-
Nickel (Ni), ppb	140	75	8.3
Vanadium (V), ppb	-	-	-
Total PCB, ppb	-	0.03	-
Total DDT, ppb	0.13	0.001	-

¹ Criteria Maximum Concentration

² Criteria Continuous Concentration

TABLE 4
BULK SEDIMENT ANALYSIS (1983)
Perkins Cove, Ogunquit, Maine

Substance	"A" Surface	"B" Surface	"C" Surface	"D" Surface	"E" 0.0-0.25'	"E" 1.05-1.30'	"F" Surface
Classification	sandy gravel (GP)	sandy gravel (GW)	silty fine sand (SM)	organic sandy silt (OL)	sandy silt (ML)	sandy silt (ML)	organic sandy silt (OH)
% Fines	<1.0	<1.0	18.0	52.0	65.0	65.0	60.0
COD, ppm	1,285	8,776	10,400	51,600	32,400	57,500	98,900
% Volatiles, NED	0.49	0.86	1.51	6.28	3.58	3.50	12.35
Oil & Grease, ppm	110	260	640	420	190	--	180
Mercury (Hg), ppm	0.05	<0.05	0.12	<0.05	0.08	0.22	<0.05
Lead (Pb), ppm	4.0	9.0	6.0	20.0	33.0	14.0	83.0
Zinc (Zn), ppm	30.0	43.0	60.0	66.0	49.0	36.0	57.0
Arsenic (As), ppm	<1.0	4.7	<1.0	2.1	<1.0	2.2	1.2
Cadmium (Cd), ppm	<1.0	<1.0	1.0	1.0	1.0	<1.0	1.0
Chromium (Cr), ppm	7.0	19.0	9.0	14.0	17.0	12.0	28.0
Copper (Cu), ppm	4.0	9.0	11.0	17.0	14.0	9.0	26.0
Nickel (Ni), ppm	<10.0	13.0	16.0	11.0	12.0	12.0	18.0
Vanadium (V), ppm	<100	<100	<100	<100	<100	<100	<100
PCB, ppb			20.0				192
DDT, ppb			<20.0				<20.0

TABLE 5
STATE OF MAINE
Preliminary Chemical Sediment Classification Guidelines*

<u>Constituent</u>	<u>Class I</u>	<u>Class II</u>	<u>Class III</u>
% Oil and Grease	<0.25	0.25-1.2	>1.2
% Volatile Solids	<4.5	4.5-15.3	>15.3
% Silt/Clay (#200 sieve)	15-60	60-90	>90
Mercury (Hg), ppm	<0.5	0.5-3.0	>3
Lead (Pb), ppm	<83	83-285	>285
Arsenic (As), ppm	<7	7-22	>22
Cadmium (Cd), ppm	<3	3-15.5	>15.5
Chromium (Cr), ppm	<112	112-513	>513
Copper (Cu), ppm	<83	83-342	>342
Nickel (Ni), ppm	<36	36-92	>92
PCB, ppm	0	0-4.9	5-49

*Maine Department of Environmental Protection, Augusta, Maine. 1986
Guidelines for Upland Disposal

TABLE 6

Perkins Cove Water Chemistry Data
September 18, 1986

	Temperature (Celsius)	Salinity 0/00
Air	19.0	--
Surface	14.0	21.8
1 meter	13.25	22.8
2 meters	13.0	23.5
3 meters	13.0	23.8
4 meters	13.0	24.0

Dissolved oxygen: 8.6 ppm Secchi disk: 3.75 meters
pH: 6.5-7.0

Data was collected during an incoming tide with a five to ten knot onshore breeze. Weather was calm and cloudy.

Benthic samples were taken from locations "C" through "F" with a VanVeen grab and screened through a 0.5 mm sieve. No full grabs were obtained from locations "A" or "B" due to the gravelly nature of the substrate. Blue mussel (Mytilus edulis), limpet (Crepidula fornicata), and the hermit crab (Pagurus longicarpus) were found in the partial sample from location "B". Table 7 lists the benthic species collected from the remaining stations. It is evident from the table that the dominant infauna species is the benthic worm Capitella capitata. It comprised at least 95% of the species collected from each station.

Many lobsters inhabit the project area during the summer months while shedding. The lobsters do not overwinter due to the freshwater input which depresses the salinity. Smaller populations of green crabs (Carcinus maenas) are known to occupy the project area (Brad Sterl, per. comm., 1986).

Granite stone riprap, floats and piers around the harbor provide habitat for the seaweeds Fucus edentatus and Chondrus crispus. Blue mussel and the common periwinkle (Littorina littorea) are also found among the riprap.

The greatest populations of pollock (Pollachius virens), mummichug (Fundulus heteroclitus), and rainbow trout (Salmo gairdneri) occur in the summertime (Brad Sterl, per. comm., 1986). Smaller fish from the Gulf of Maine such as mackerel (Scomber scombrus) and herring (Alosa sapidissima) may also inhabit Perkins Cove (Sonny Pierce, per. comm., 1986).

During a field site visit by staff from NED in September 1986, cunner (Tautoglabrus adspersus), winter flounder (Pseudopleuronectes americanus), and Atlantic menhaden (Brevoortia tyrannus) were observed in the project area.

Brown trout (Salmo trutta) is stocked in the Josias River in the spring. Brook trout (Salvelinus fontinalis) which is stocked in the nearby Ogunquit River and may also occur in the Josias River (Sonny Pierce, per. comm., 1986).

A five minute late morning observation of birds in the project area in November revealed the following species: herring gull (Larus argentatus), chimney swifts (Chaetura pelagica), blue jays (Cyanocitta cristata), and pigeons (Columba livia). The most common species recorded in the project area was the herring gull, with eight adults and four juveniles noted.

Common species of waterfowl expected along the Ogunquit coast were observed in January by the staff of NED. Several sea ducks sited include common goldeneye (Bucephala clangula), bufflehead (Bucephala albeola), harlequin duck (Histrionicus histrionicus), common eider (Somateria mollissima), old squaw (Clangula hyemalis), and three species

TABLE EA-7

Number of benthic organisms recovered with a Van Veen (0.04m²) grab in Perkins Cove, Maine on September 18, 1986.

Species	Station C			Station D			Station E			Station F		
	Replicate:1	2	3	Replicate:1	2	3	Replicate:1	2	3	Replicate:1	2	3
Phylum Annelida												
Class Polychaeta												
<u>Capitella capitata</u>	18	56	21	-	-	-	10	11	12	1	42	2
<u>Tharyx acutus</u>									1			
Phylum Arthropoda												
Class Crustacea												
<u>Crangon septemspinosum</u>			1									

of scoters (Melanitta sp.). Other birds observed along the coast include common loon (Gavia immer), horned grebe (Podiceps auritus), and common merganser (Mergus merganser).

2. Disposal Site

a. Physical and Chemical The proposed disposal site has been used in the past for the disposal of dredged material, principally from the Kennebunk River. A recent site investigation found the majority of this site to consist of a hard bottom characterized by numerous rock outcroppings and boulders. This investigation consisted of a detailed bathymetric survey, sidescan sonar survey and bottom sampling to obtain a visual description of the material. It also revealed a 30-40 meter deep trough oriented in the north, south direction extending from the northern portion of the above described circle (SAIC 1984). Side scan data and bottom sampling revealed a soft substrate on the floor of the trough. The disposal point will be over this trough within the limits of the circle shown in Figure EA-3.

Physical oceanographic monitoring in the vicinity of the CADS site depicts isothermal water column winter conditions of 6°C and a stratified summer condition with a strong 20 to 30 meter deep thermocline. Bottom currents vary seasonally with a southerly tidal current drift of 10-15 cm/sec. Infrequently, major storm events impart persistent bottom currents southerly at 30-40 cm/sec. Long period (9-10 second) waves may also increase bottom currents, but only occur once every 3-5 years. These determinations indicate CADS is a containment area suitable for the disposal of dredged material.

The disposal point is located in a 200-meter wide trough with a cobble apron grading into a rock ridge to the east and west. The disposal site trough is characterized as having a fine sand substrate with silt in the vicinity of disposal deposits.

Chemically, the sediments and water column show low concentrations of all chemical contaminants at CADS (see Appendix A). The only contaminant concentration in the sediment detected above ambient concentrations was oil and grease at approximately 300 ppm. This is not an anomalously high value, but reflective of the recent deposition of dredged material from the Kennebunkport River channel. Analysis of the chemical contaminant residue in the tissues of resident benthos (Nephtys incisa, Arctica islandica and Mytilus edulis) also indicate the area is not significantly contaminated as a result of previous dredged material disposals.

b. Biological

The biological environment at CADS was characterized using manned submersible observations, sediment-water interface profiling cameras, demersal gill nets and 0.1m² Smith-McIntyre grab (SAIC, 1986).

The disposal area at CADS contained an average of 70 species /m² and 16.5 k individuals /m². The benthic community is dominated by oligochaets and the burrowing polychaete Sternaspis fossor and the bivalve Nucula annulata (see Appendix A). The sediment water interface photographs (digitally analyzed) indicate this "pioneering" benthic assemblage was present in the area of dredged material disposal.

Finfish samples were dominated by the spiny dogfish, Squalus acanthias, but other species recovered include butterfish, Peprilus triacanthus; lobster, Homarus americanus; smooth skate, Raja senta; red hake, Urophycis chuss, silver hake, Merluccius bilinearis; and various flounder.

3. Threatened and Endangered Species

Coordination with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (letter May 30, and June 11, 1984, December 11, 1987, in Appendix 1) shows that except for occasional transient individuals, no Federally listed or proposed species are known to exist in the project impact area.

4. Commercially and Ecologically Significant Species

There are no commercially significant species within the project site. However, commercially significant species outside the project area include lobsters that are harvested in the summer outside the channel area and brown trout stocked at the mouth of Josias River. Sufficient quantities of blue mussels in the area are not available for harvesting but may provide spat for neighboring harbors.

5. Historic and Archaeological Resources

It has been determined by the Maine Historic Preservation Commission (letter, February 6, 1985 and November 3, 1987, Appendix 1) that no structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966 is known to exist in the project impact area.

6. Social and Economic Resources

The recreational boating industry in New England is currently undergoing a rapid rate of growth. In the southern Maine coastal area this is related to an increase in the construction of seasonal second homes. The seasonal population in Ogunquit during the summer is higher than the year-round population. The total summer fleet, both commercial and recreational, at Perkins Cove is 114 percent larger than the year-round exclusively commercial fleet. There is an increasing demand for more safe anchorage areas for seasonal recreational craft along the entire Maine southern coast including Ogunquit. A waiting list for summer mooring space at Perkins Cove has steadily grown as the summer population has increased. Similar waiting lists for seasonal mooring spaces exist for all neighboring ports.

Much of the economic base is firmly entrenched in seasonal tourism in and around Perkins Cove. Many of the small privately owned shops and stores are dependent on the influx of summer tourists and their spending habits. Periodic maintenance is necessary to ensure that both pleasure craft and commercial fleets use Perkins Cove and provide the necessary capital stimulation into the Ogunquit economy. Tourism, especially in the form of retail trade, provides much of the monetary cash flow in the town. The list below provides a basic breakdown of the retail trade sector of the economy:

RETAIL TRADE SECTOR	NUMBER OF FIRMS	PERCENT OF TOTAL
1. Clothing-men's and women's	15	35%
2. Fish Dealers	5	12%
3. Florists	2	4%
4. Gift Shops	15	35%
5. Grocers - retail	3	7%
6. Hobby and Crafts Shops	3	7%
Total	43	100%

E. ENVIRONMENTAL CONSEQUENCES

1. Dredging Site

a. Physical and Chemical

Standard elutriate tests were performed for the proposed work using sediments and water collected from Perkins Cove. The results are presented in Table 2. The EPA standards, against which the results of the elutriate tests are measured to assess the materials potential impacts on the water quality, are listed in Table 3. In every case, comparison of results for released constituents into the water was less than its related water quality criteria. Comparing the elutriate test results using dredge site waters with and without dredged material indicates little significant difference. The exception is ammonia, which exhibit releases at concentrations slightly greater than present levels. The use of a mechanical dredge will cause minimal disturbance of the amount of material released directly into the water column. Although various chemical contaminants associated with sediments can conceivably be released into the water column during the dredging operations, bulk chemical and elutriate test results of the sediments to be dredged revealed no significant concentration or release of the parameters tested (Tables 2 and 4).

Dispersion of sediments can cause a temporary increase in suspended and dissolved solids. This would increase turbidity, diminishing light available for photosynthesis for the short term in localized areas. Overall, turbidity effects should be minor and localized to the project area.

Objectionable odors may arise from the confined dredged material in the disposal area, most probably as a result of hydrogen sulfide (H_2S) given off by anaerobic bacterial breakdown of organic materials. The breakdown of materials, such as sewage, into non-oxygenated sulfurous material will produce a sulfurous "rotten egg" odor. If there is sewage in the organic material, non-oxygenated nitrogenous compounds in the form of amines may be produced. These will also cause an odor when the material is exposed to air. The coarse nature of the material to be dredged however indicates that such odors will be minimal and temporary as there should be little organic material present.

Removal of ledge rock from portions of the channel and anchorage area will require drilling and blasting with dynamite. The lethality of explosive activities on fish is directly related to its detonation velocity, charge weight, density of the material to be blasted, and the size, location and orientation of the fish. Explosives in a rock or clay substrate produce low-level over pressures with subsequent reduced lateral or vertical pressure changes. The limited amount (220 cubic yards) of rock to be blasted and the season of activity would minimize the impacts. The type of blasting that will be conducted is of the "fracture type" as opposed to the "removal" or open water blasting operations. A modification of Yelverton's blasting model (Yelverton, et al. 1975) indicates that a maximum 50% mortality rate for fish could occur within 30 meters of the blasting.

The technique for excavation of a submerged ledge is similar to that used in routine highway construction. Bore holes are drilled into the rock where explosives are then placed. This type of blasting technique has limited horizontal amplification. In fact, the overlying waters act as a buffer or blanket which prohibits or reduces any horizontal impacts resulting in a vertical crumbling or collapse of the rock formation. Blasting at high tide will further reduce any horizontal amplification. Increases in any turbidity and/or suspended sediments would have a minor and temporary effect.

Noise impacts will be generated by construction activities. This impact is unavoidable, but because of the lower numbers of people and environmental noise receptors in the project area during the winter months, its effects will be minimal.

b. Biological

Removal of benthic organisms which are within the dredge sediments is an unavoidable result of dredging. Mobile species such as finfish, crabs and lobsters should avoid the actual area of dredging. Recolonization of areas impacted by dredging has been demonstrated within a period of approximately 1-1/2 years in Chesapeake Bay (Pfitzenmeyer,

1970). Abundance of the dominant species and total number of species observed were reduced following dredging, but returned to predredging levels the following year. Species diversity (Margalef index) remained lower in the channel even after this period. However, community structure in this area of Chesapeake Bay is not especially stable because of the magnitude and variety of environmental stresses occurring naturally.

Resedimentation of those materials stirred up by dredging can have a physical impact on surrounding bottom areas by smothering immobile bottom dwelling organisms. The quantity of sediment distributed in this way would be temporary in the dredging area itself. Studies in New Haven Harbor have shown that approximately 2.5% of the silt lifted by a clamshell dredge flows downstream in the surrounding water. (Gordon, 1974). The resulting siltation rate immediately downcurrent of the dredge was 0.5 mm/day.

The dominant benthic species in Perkins Cove is the polychaete worm Capitella capitata. It is a species common in sandy substrates, and is dependent on the type of substrate and the source of food. A combination of organic enrichment and chemical oxygen demand within the limited circulation of Perkins Cove probably inhibit the proliferation of other species, especially when water temperatures become elevated. The sulphide concentration, measured indirectly by the elutriate test, indicate that sulphides may be present in sufficient concentration to inhibit large densities of Capitella capitata (James and Gibson, 1979).

Deepening the cove and removing the organically enriched silty sediments may increase the potential for a more diverse community to establish. Given the short (20 day) generation time of Capitella capitata (Tenore and Chesney, 1985) the area defaunated by dredging can be expected to return to its pre-dredged benthic community structure within a few months. Capitella capitata will physically rework the substrate and allow other seasonal recruitment of benthos into the substrate.

Survival and settling of shellfish larvae can be affected by downstream siltation. Recruitment of settling larvae to benthic communities has been observed to be reduced in areas near dredging (Rosenberg, 1977). High suspended silt levels can adversely affect oyster spat. Silt levels of 0.25 g/l reduced survival rate to straight-hinge stage to 75%; 0.50 g/l to 31% (Loosanoff, 1961). In another study, continuously suspended natural sediments cause increased larval mortality at concentrations as low as 0.1 g dry wt. per liter (Cardwell, et.al., 1976). Suspended materials showed similar effects on larvae of Mercenaria mercenaria, the quahog. Blue mussels Mytilus edulis, in the cove are not presently available for harvesting because of the high bacterial levels, but are a valuable resource for stock preservation. The proposed time of dredging will create little if any siltation impacts on this resource.

2. Disposal Site

a. Physical and Chemical

Dredged material from Perkins Cove will be placed on a dump scow and towed to the Cape Arundel disposal site, approximately seven nautical miles northeast of the project area. Each scow can transport approximately 800 cubic yards per day. The material will be released through doors on the bottom of the scow into the water column for deposition. Most of the material released from the scow would be transported to the bottom through convective descent. Only a small amount of fine sediment would remain suspended for a significant period of time following disposal.

Sampling of CADS (SAIC, 1986) was undertaken to address NED's disposal site management questions. A prime objective of the characterization tests was to determine whether or not the site is a low energy environment capable of containing the dredged material. Test results indicate that tidal currents are not strong enough at the site to resuspend sediments. Occasional intense northeasterly storm events could move the sediments. However, it is expected to have a minimal impact and be undetectable beyond the margins of the site. Therefore, dredged material is expected to remain stable within the site over the long term.

Elutriate test results are used to determine the potential amount of contaminant release into the water system from dredged material. Water for the elutriate tests was obtained from Perkins Cove. Due to the large volume of water at the disposal site and minor releases identified in the elutriate tests (Table 2), the dredged material is not expected to impact water quality at the disposal site.

b. Biological

The disposal of dredged sediments would bury any benthic organisms at the dump site. Burying of more sensitive eggs, larvae and juvenile forms would probably result in death. Larger mobile forms such as fish would have a better chance of survival. Although some species may lose their traditional forage site, the area represents a small percentage of similar habitats available throughout the Gulf of Maine. Those organisms killed or injured in the discharged sediments would serve as prey for scavenging crustaceans, gastropods and fish in the vicinity of the disposal site.

The current assemblage of benthic species in the disposal area, where dredged material has been deposited in the past, are indicative of a pioneering community. Environmental studies conducted (SAIC, 1986) at CADS denoted differences in species composition and densities between stations containing dredged material and non-dredged material. At the dredged material stations, higher densities of near-surface dwelling oligochaetes and low densities of head down, deposit feeders, e.g. malanids were recorded. These deposit-feeders are dominant in unaltered stations. The unaltered stations also support a greater species richness and abundance.

Disposal of material at the unaltered station would likely reduce species richness to that identified in the present disposal station at CADS (SAIC, 1986). Disposal at the current discharge area will temporarily effect species composition. Recolonization of the dredge area would occur shortly after disposal activities ceased. It is anticipated that recolonization by similar species from nearby areas would occur. These species will reproduce in the spring and summer, recolonizing the disposal area. Gradually successive benthic associations would give way to a climax community of longer-lived species. This climax community occur if no additional disposal operations occur within the next few years.

3. Threatened and Endangered Species

Based on determinations by the National Marine Fisheries Service (NMFS) and the Fish and Wildlife Service, the proposed project should not affect any Federally listed threatened or endangered species.

4. Commercially and Ecologically Significant Species

Commercial species in the project area including lobsters, brown trout, and blue mussels are not expected to be adversely effected due to the time of operation which avoids the spawning period of these species. The dominant benthic species (Capitella capitata) exhibits a high reproductive rate which assumes a rapid recolonization of the dredged area.

5. Historic and Archaeological Resources

It has been determined by the Maine Historic Preservation Commission that the proposed project will have no effect upon any structure or site of historic, architectural or archaeological significance as defined by the National Historic Preservation Act of 1966.

6. Social and Economic Resources

Perkins Cove is an important aspect of the economic vitality of the town of Ogunquit. Navigational improvements are necessary in maintaining the economic benefits derived from the cove. Indirect economic benefits to the business community would be reduced if improvements are not implemented. A reduction in the tourist rate would have a negative impact not only on the retail trade but also on restaurants, marinas, and motels which cater to summer tourism.

F. COORDINATION

In the course of the preparation of this draft environmental assessment, numerous Federal, State, and local agencies and officials were contacted. In most instances, contacts were initially made to obtain information; however, opinions of the various officials as to dredging and

disposal related impacts were also solicited and the replies utilized in the preparation of this document. A meeting was held March 22 at the Ogunquit Town Hall to appraise local and state interest and the status of the study, identify any environmental concerns and acquire information relative to fish and shellfish resources in the area.

The proposed work is being coordinated directly with the following agencies and interested parties:

Federal

U.S. Fish and Wildlife Service, Concord, N. H.
Ecological Services
P.O. Box 1518
Concord, New Hampshire 03301

National Marine Fisheries Service
Habitat Conservation Office
2 State Fish Pier
Gloucester, Massachusetts 01930

U.S. Environmental Protection Agency
Region 1
JFK Federal Building
Boston, Massachusetts 02203

State

Maine Historic Preservation Commission
55 Capitol Street
State House Station 65
Augusta, Maine 04333

Maine Department of Marine Resources
State House Station #21
Augusta, Maine 04333

Maine Department of Environmental Protection
State House Station #17
Augusta, Maine 04333

Maine Department of Inland Fisheries and Wildlife
Regional Headquarters in Gray
328 Shaker Road
Gray, Maine 04039

Local

Harbormaster
Town Hall
Ogunquit, Maine 03907

Town Manager
Town Hall
Ogunquit, Maine 03907

G. COMPLIANCE

The compliance status of this project with Environmental Protection Status and Executive Orders is as follows:

COMPLIANCE WITH ENVIRONMENTAL FEDERAL STATUTES AND EXECUTIVE ORDERS

1. Preservation of Historic and Archaeological Data Act of 1974, as amended, 16 U.S.C. 469 et seq

Compliance: Not Applicable; project does not require mitigation of historic or archaeological resources at this time.

2. Clean Air Act, as amended, 42 U.S.C. 7401 et seq.

Compliance: Submission of this report to the Regional Administrator of the Environmental Protection Agency for review pursuant to Sections 176c and 309 of the Clean Air Act signifies partial compliance.

3. Clean Water Act of 1977 (Federal Water Pollution Control Act Amendments of 1972) 33 U.S.C. 1251 et seq.

Compliance: A Section 404(b)(1) Evaluation and Compliance Review have been incorporated into this report. An application shall be filed for State Water Quality Certification pursuant to Section 401 of the Clean Water Act.

4. Coastal Zone Management Act of 1972, as amended, 16 U.S.C. 1431 et seq.

Compliance: A CZM consistency determination shall be provided to the State for review and concurrence that the proposed project is consistent with the approved State CZM program.

5. Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq.

Compliance: Coordination with the U.S. Fish Wildlife Service (FWS) and/or the National Marine Fisheries Service (NMFS) has yielded no formal consultation requirements pursuant to Section 7 of the Endangered Species Act.

6. Estuarine Areas Act, 16 U.S.C. 1221 et seq.

Compliance: Not Applicable; this report is not being submitted to Congress.

7. Federal Water Project Recreation Act, as amended, 16 U.S.C. 4601-12 et seq.

Compliance: Coordination with the National Park Service (NPS) and Office of Statewide Planning relative to the Federal and State comprehensive outdoor recreation plans signifies compliance with this Act.

8. Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661 et seq.

Compliance: Coordination with the FWS, NMFS, Maine Department of Environmental Protection, and Maine Department of Marine Resources signifies compliance with the Fish and Wildlife Coordination Act.

9. Land and Water Conservation Fund Act of 1965, as amended, 16 U.S.C. 4601-4 et seq

Compliance: Coordination with the National Park Service (NPS) and Office of Statewide Planning relative to the Federal and State comprehensive outdoor recreation plans signifies compliance with this Act.

10. Marine Protection, Research, and Sanctuaries Act of 1972, as amended, 33 U.S.C. 1401 et seq.

Compliance: Circulation of this report for public review, including an evaluation and findings concerning the transportation or disposal of dredged material in ocean waters pursuant to Sections 102 and 103 signifies compliance with this Act.

11. National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq.

Compliance: Coordination with the State Historic Preservation Office determined that no historic or archaeological resources would be affected by the proposed project.

12. National Environmental Policy Act of 1969, as amended, 42 U.S.C. 432 et seq.

Compliance: Preparation of this report signifies partial compliance with NEPA. Full compliance shall be noted at the time the Finding of No Significant Impact is issued.

13. Rivers and Harbors Appropriation Act of 1899, as amended, 33 U.S.C. 401 et seq.

Compliance: No requirements for Corps projects or programs authorized by Congress. The proposed navigation improvement project is pursuant to the Congressionally-approved continuing authority program; i.e. Section 107 of the River and Harbor Act of 1960.

14. Watershed Protection and Flood Prevention Act, as amended, 16 U.S.C. 1001 et seq.

Compliance: No requirements for Corps activities.

15. Wild and Scenic Rivers Act, as amended, 16 U.S.C. 1271 et seq.

Compliance: Not Applicable; project is located within the marine environment.

Executive Orders

1. Executive Order 11988, Floodplain Management, 24 May 1977 as amended by Executive Order 12148, 20 July 1979.

Compliance: Not Applicable; project is not located within a floodplain.

2. Executive Order 11990, Protection of Wetlands, 24 May 1977.

Compliance: Not Applicable; project does not involve nor impact wetlands.

3. Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, 4 January 1979.

Compliance: Not Applicable; project is located within the United States.

Executive Memorandum

1. Analysis of Impacts of Prime or Unique Agricultural Lands in Implementing NEPA, 11 August 1980.

Compliance: Not Applicable; project does not involve nor impact agricultural lands.

H. REFERENCES

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- James, Colin J. and Ray Gibbon. 1980. The distribution of the Polychaete Capitella capitata (Fabricius) in dock sediments. Estuarine and Coastal Marine Sciences 10:671-683.
- Loosanoff, V.L. 1961. Effects of turbidity on some larval and marine bivalves. Proc. Gulf. Carib. Fish. Inst. 14: 80-95.
- Pfitzenmeyer, H. 1970. Gross physical and biological effects of overboard spoil disposal in upper Chesapeake Bay. Benthos. Special report No. 3, Natural Resources Institute, University of Maryland.
- Rosenberg, R. 1977. Effects of dredging operations on estuarine benthic macrofauna. Marine Poll. Bull. 8: 102-104.
- Science Application International Corporation (SAIC). 1984. DAMOS - Disposal Area Monitoring System - Summary of Program Results. Volume III, Part C, Sections IV. Report No. SAIC-84/6521 & C46 to New England Division - U.S. Army Corps of Engineers, Waltham, MA.
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- Tenore, Kenneth R. and Edward J. Cheshey. 1985. The effects of interaction of rate of food supply and population density on the bioenergetics of the opportunistic polychaete, Capitella capitata (type 1). Limnol. Oceanogr. 30:1185-1195.
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JOSIAS RIVER
AT PERKINS COVE
OGUNQUIT, MAINE

ENVIRONMENTAL ASSESSMENT

SECTION II

SECTION 404 (b)(1) EVALUATION

NEW ENGLAND DIVISION
U.S. ARMY CORPS OF ENGINEERS, WALTHAM, MA
SECTION 404(b)(1) EVALUATION

PROJECT: Perkins Cove, Ogunquit, Maine

PROJECT MANAGER: Susan Scott

EXT. 7549

FORM COMPLETED BY: Cathy Demos

EXT. 7231

PROJECT DESCRIPTION:

Perkins Cove is a small, well protected harbor which serves as a home port to local commercial fishermen. Improved access channel and anchorage depths are needed for the new larger commercial fishing fleets which are gradually replacing the aging vessels. Dredging will remove approximately 200 cubic yards of rock and 19,700 cubic yards of sediment. Disposal of the dredged material will occur at the Cape Arundel ocean disposal site located approximately seven nautical miles northeast of Perkins Cove.

NEW ENGLAND DIVISION
U.S. ARMY CORPS OF ENGINEERS, WALTHAM, MA

PROJECT: Josias River at Perkins Cove, Ogunquit, Maine

SHORT-FORM
Evaluation of Section 404(b)(1) Guidelines

1. Review of Compliance Section 230.10(a)-(d).

A review of the permit application indicated that:

- a. The discharge represents the least environmentally damaging practicable alternative and if a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose unless there are no practicable alternatives to the proposed activity. (If no, see section 2 and information gathered for EA alternative);

YES X NO

- b. The activity does not appear to 1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA: 2) jeopardize the existence of Federally listed endangered or threatened species or their habitat: and 3) violate requirements of any Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies);

YES X NO

- c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2)

YES X NO

- d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 5).

YES X NO

2. Technical Evaluation Factors (Subparts C-F). N/A Not Signifi- Signifi-
cant cant

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C).

- 1) Substrate impacts.
- 2) Suspended particulates/turbidity impacts.
- 3) Water column impacts.
- 4) Alteration of current patterns and water circulation.
- 5) Alteration of normal water fluctuations/hydroperiod.
- 6) Alteration of salinity gradients.

X
X
X
X
X
X

b. Biological Characteristics of the Aquatic Ecosystem (Subpart D).

- 1) Effect on threatened/endangered species and their normal habitat.
- 2) Effect on the aquatic food web.
- 3) Effect on other wildlife (mammals birds, reptiles and amphibians).

X
X
X

N/A	Not Signifi- cant	Signifi- cant
-----	----------------------	------------------

- X
X
X
X
X
X

X
X
X
X

- X

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.)

- | | | |
|----|--|-------------------|
| 1) | Physical characteristics..... | <u>X</u> |
| 2) | Hydrography in relation to
known or anticipated sources
of contaminants..... | <u> </u> |
| 3) | Results from previous testing
of the material or similar
material in the vicinity
of the project..... | <u>X</u> |
| 4) | Known, significant sources of
persistent pesticides from
land runoff or percolation..... | <u> </u> |
| 5) | Spill records for petroleum
products or designated
(Section 311 of CWA) hazardous
substances..... | <u>X</u> |
| 6) | Other public records of significant
introduction of contaminants
from industries, municipalities, or
other sources..... | <u> </u> |

- 7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment By man-induced discharge activities.....
- 8) Other sources (specify).....

—
—

List appropriate references.

- 1) Sediment from the project site range from sandy-gravel to silty sand and sandy silt.
 - 3) Previous results reveal a progression towards a more gravelly substrate in the upper channel and lower chemical concentrations in 1983 than earlier test data.
 - 5) Code officer from the town of Ogunquit reported a spill of approximately 250 gallons of furnace oil about three years ago. This spill was cleaned up and is not likely to affect the sediments.
- b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to require constraints. The material meets the testing exclusion criteria.

YES X NO

4. Disposal Site Delineation Section 230.11(f).

- a. The following factors as appropriate, have been considered in evaluating the disposal site.

- 1) Depth of water at disposal site..... X
- 2) Current velocity, direction, and variability at disposal site..... X
- 3) Degree of turbulence.....
- 4) Water column stratification.....
- 5) Discharge vessel speed and direction..... X
- 6) Rate of discharge.....
- 7) Dredged material characteristics (Constituents, amount, and type of material, settling velocities)..... X
- 8) Number of discharges per unit of time.....
- 9) Other factors affecting rates and patterns of mixing (specify).....

List appropriate references.

Perkins Cove Environmental Assessment.

- b. An evaluation of the appropriate factors in 4a above indicates that our disposal site and/or size of mixing zone are acceptable.

YES X NO

5. Actions To Minimize Adverse Effects (Subpart H).

All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.

YES X NO

List actions taken.

- 1) Dredging will take place between November to April, therefore, avoiding the spawning of shellfish.

6. Factual Determination Section 230.11.

All review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short or long-term environmental effects of the proposed discharge as related to:

- a. Physical substrate at the disposal site (review sections 2a, 3, 4, and 5 above).
b. Water circulation, fluctuation and salinity (review sections 2a, 3, 4, and 5).
c. Suspended particulates/turbidity (review sections 2a, 3, 4, and 5).
d. Contaminant availability (review sections 2a, 3, and 4).
e. Aquatic ecosystem structure and function (review sections 2b and c, 3, and 5).
f. Disposal site (review sections 2, 4, and 5).
g. Cumulative impact on the aquatic ecosystem.
h. Secondary impacts on the aquatic ecosystem.

YES X NO

YES X NO

YES X NO

YES X NO

YES X NO

YES X NO

YES X NO

YES X NO

7. Findings.

The proposed disposal site for discharge
of dredged or fill material complies
with Section 404(b)(1) guidelines..... X

29 June 1990
DATE

Daniel M. Wilson
DANIEL M. WILSON
Colonel, Corps of Engineers
Division Engineer

JOSIAS RIVER
AT PERKINS COVE
OGUNQUIT, MAINE

ENVIRONMENTAL ASSESSMENT

SECTION III

FINDING OF NO SIGNIFICANT IMPACT

FINDING OF NO SIGNIFICANT IMPACT

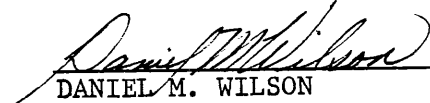
The proposed Small Navigation Improvement Project at Perkins Cove in Ogunquit, Maine will provide for deepening the entrance channel (900 feet long and 40 feet wide) and the front half of the 4.2 acre anchorage (2.1 acres) from -5 feet to -7 feet mlw and the ocean disposal of 19,900 cubic yards of dredged material. The dredged material will be excavated by a mechanical dredge and placed on a deck barge for transport through the 40-foot wide foot-bridge, then rehandled onto the dump scow and towed to the Cape Arundel Disposal site.

The Finding of No Significant Impacts, from information presented in the Environmental Assessment, is attributable to the following considerations:

1. The temporary loss of 3 acres of benthic communities would not cause sustained or substantial impact to the ecological integrity of the region's aquatic resources; there are no productive shellfish beds or fisheries in the cove. The benthic community is expected to reestablish itself within a year.
2. The proposed plan will not involve significant aquatic habitat (e.g. saltmarsh), or affect any endangered species, cultural resources or commercially important shellfish populations or any species of ecological significance.
3. The dredging operations will be scheduled during the period from November through April which will minimize impacts to lobster populations, recreational boating and the tourist trade.
4. The generation of suspended material and turbidity will cease with discontinuation of dredge activity and will be localized due to the coarse nature of the material being dredged. No other water quality impacts are anticipated.
5. Coordination with appropriate Federal and state agencies insured that concerns and suggestions were made known to the Corps and these concerns were incorporated into the planning process. These agencies expressed that no overriding environmental issues were associated with this project.
6. The proposed project complies with all applicable environmental statutes and executive order.

Based on my review and evaluation of the environmental effects as presented in the Environmental Assessment, I have determined that this Perkins Cove Navigation Improvement Project is not a major Federal action significantly affecting the quality of the human environment and is, therefore, exempt from requirements to prepare an environmental impact statement.

29 June 1990
DATE


DANIEL M. WILSON
Colonel, Corps of Engineers
Division Engineer

JOSIAS RIVER
AT PERKINS COVE
OGUNQUIT, MAINE

ENVIRONMENTAL ASSESSMENT

APPENDIX A

CAPE ARUNDEL DISPOSAL SITE DATA

CAPE ARUNDEL DISPOSAL SITE DATA

The following tables are data obtained for NED - Disposal Area Monitoring System (DAMOS) by Science Applications International Corporation (SAIC) under Contract # DACW33-85-D-0008 and HMM Associates under Contract # DACW33-85-D-0001.

TABLE EA-A-1

pH Levels In CADS Water Samples

	<u>Depth (m)</u>	<u>May 1985</u>	<u>September 1985</u>	<u>January 1986</u>
Surface	1	8.15	8.05	7.82
Middle	24	8.14	8.04	7.92
Bottom	47	8.15	7.89	7.78

TABLE EA-A-2

Dissolved Oxygen Concentrations (mg/l) In CADS Water Samples

	<u>Depth (m)</u>	<u>May 1985</u>	<u>September 1985</u>	<u>January 1986</u>
Surface	1	10.3 +/- 1.4 ¹ (8.7) ²	10.9 +/- 0.6(7.8)	— ³
Middle	24	9.8 +/- 0.2 (9.5)	9.5 +/- 0.7(8.6)	—
Bottom	47	10.1 +/- 0.9 (9.8)	7.1 +/- 0.3(9.0)	—

1-Mean +/- standard deviation of 3 analyses.

2-Oxygen saturation value for the salinity and temperature of the seawater sampled (Kester, 1975).

3-Analytical problems encountered.

TABLE EA-A-3

Nutrient Concentrations In CADS Water Samples (ppm)

	<u>Depth (m)</u>	<u>May 1985</u>	<u>September 1985</u>	<u>January 1986</u>
<u>Surface</u>	1			
PO ₄ -P		<0.01	0.02	0.05
NO ₃ /NO ₂ -N		0.02	0.03	0.20
NH ₃ -N		0.034	0.36	0.28
<u>Middle</u>	24			
PO ₄ -P		0.01	0.02	0.03
NO ₃ /NO ₂ -N		0.01	0.09	0.23
NH ₃ -N		0.27	0.30	0.20
<u>Bottom</u>	47			
PO ₄ -P		0.01	0.03	0.04
NO ₃ /NO ₂ -N		0.01	0.21	0.25
NH ₃ -N		0.26	0.30	0.32

EA-A-4

TABLE EA-A-4

Trace Metal Concentrations In CADS Seawater Samples (ppb)

	<u>Depth (m)</u>	<u>May 1985</u>	<u>September 1985</u>	<u>January 1986</u>
<u>Surface</u>	1			
Lead		<1.5	<2	<1.5
Cadmium		*	*	<0.2
Chromium		<0.5	<1.5	<0.3
Nickel		*	N.A.	N.A.
Copper		*	<2	<1.0
Zinc		<20	<20	<2.0
Arsenic		<2.0	<3	2.6
Mercury		<0.5	<1	2.2
<u>Middle</u>	24			
Lead		<1.5	<2	<1.5
Cadmium		*	*	<0.2
Chromium		<0.5	<1.5	<0.3
Nickel		5.0	N.A.	N.A.
Copper		<5	<2	1.0
Zinc		<20	<20	<20
Arsenic		<2.0	<3	1.1
Mercury		<0.5	<1	2.1
<u>Bottom</u>	47			
Lead		<1.5	<2	<1.5
Cadmium		*	*	<0.2
Chromium		<0.5	<1.5	<0.3
Nickel		5.0	N.A.	N.A.
Copper		<5	<2	1.2
Zinc		<20	<20	<20
Arsenic		<2.0	<3	2.2
Mercury		<0.5	2.4	2.2

*Sample contaminated.

N.A. - Not analyzed

TABLE EA-A-5

Trace Organic Concentrations In CADS Bottom Water Samples (ppb)

	<u>May 1985</u>	<u>September 1985</u>
Total PAH	<20	N.A.
PCB (dissolved)	0.0019	*
PCB (particulate)	<0.005	*

N.A. - Not Analyzed.

*Sample contaminated.

TABLE EA-A-6

Trace Metal Concentrations In CADS Sediment Samples (ppm Dry Weight)

	<u>Reference</u> <u>May 1985</u>	<u>Reference</u> <u>September 1985</u>	<u>South</u> <u>September 1985</u>	<u>Reference</u> <u>January 1986</u>
Arsenic	5.0+/-0.5 ¹	6.6+/-1.6	4.3+/-1.0	7.0+/-1.6
Lead	<19	34+/-14	39+/-10	52+/-4
Zinc	49+/-2	50+/-10	66+/-10	64+/-23
Chromium	27+/-4	33+/-2	35+/-9	34+/-4
Copper	<7	12+/-1	12+/-4	16+/-1
Cadmium	<4	<3	<3	<3
Nickel	<26	<24	<25	<24
Mercury	<0.05	0.15+/-0.10	<0.1	0.09+/-0.03

¹mean +/- standard deviations of triplicate analyses.

TABLE EA-A-7

Organic Analysis Results Of CADS Sediment Samples
Concentrations As Dry Weight

	<u>Reference</u> <u>May 1985</u>	<u>Reference</u> <u>September 1985</u>	<u>South</u> <u>September 1985</u>	<u>Reference</u> <u>January 1986</u>
Total Carbon, %	1.16+/-0.06 ¹	1.28+/-0.25	2.43+/-0.10	1.47+/-0.26
Total Hydrocarbon, %	0.32+/-0.03	0.32+/-0.06	0.43+/-0.06	0.38+/-0.04
Total Nitrogen, %	0.14+/-0.01	0.14+/-0.02	0.24+/-0.03	0.16+/-0.03
Ammonia, ppm	298 ²	N.A.	N.A.	N.A.
Oil and Grease, ppm	66+/-8	121+/-38	298+/-72	185+/-51
Petroleum Hydrocarbons, ppm	43+/-5	110+/-25	243+/-118	169+/-43
PAH, ppm	<3	N.A.	N.A.	N.A.
PCB, ppb	10.2+/-4.3	43 ²	<10	75+/-34
DDT, ppb	<1	N.A.	N.A.	N.A.

1 - Mean +/- standard deviations of triplicate analyses.

2 - Mean of duplicate analyses.

N.A. - Not analyzed

TABLE EA-A-8

Summary Of Species (Mean No./m²) For Each
Station And Season At CADS.
(Results are based on three 0.1m² grab samples sieved to 0.5mm)

Location	North Site Sept '85	South Site Sept '85	Ref Site May '85	Ref Site Sept '85	Ref Site Jan '86
Date					
SPECIES NAME					
Actinidae					
Anemone A	.	7	.	3	.
Cerianthanidae					
<u>Cerianthus borealis</u>	.	.	3	.	3
Corymorphiidae					
<u>Heteractis aurata</u>	.	.	76	.	.
Edwardsiidae					
<u>Edwardsia</u> sp.	.	.	28	.	24
Halcampidae					
<u>Halcampa duodecimcirrata</u>	3	80	.	39	3
RHYNCHOCOELA					
Rhynchocoela A	.	.	10	.	10
Rhynchocoela B	.	.	7	.	.
Rhynchocoela sp.	.	.	3	.	3
Lineidae					
<u>Cerebratulus</u> sp.	.	.	3	.	.
<u>Micrura</u> RS	.	.	6	.	3
PLATYHELMINTHES	.	.	.	.	3
PHORONIDA					
<u>Phoronis</u> sp.	.	.	24	.	87
SIPUNCULIDA					
<u>Sipuncula</u> sp.	.	.	10	.	.
Edwardsiidae					
<u>Phascolion strombi</u>	7	.	.	.	3
ANNELIDA					
<u>Oligochaeta</u> sp.	4250	8958	5243	1765	4162

Table EA-A-8 continued.

Polychaeta					
Unknown polychaete B	31	.	.	.	.
Unknown polychaete C	3	.	.	.	.
Unknown polychaete D	3	.	.	.	.
Ampharetidae					
<u>Ampharete acutifrons</u>	.	.	.	.	3
<u>Ampharete arctica</u>	622	18	.	7	.
Ampharetidae (juv.)	.	.	.	.	3
Ampharetidae spp.	.	.	.	3	3
<u>Asabellides oculata?</u>	7	.	.	3	.
<u>Melinna cristata</u>	.	3	83	3	.
Aphroditidae					
<u>Aphrodita hastata</u>	.	.	.	3	.
Apistobrachidae					
<u>Apistobrachus tullbergi</u>	844	76	14	10	39
Capitellidae					
<u>Capitella capitata</u>	94	104	.	31	24
<u>Heteromastus filiformis</u>	.	.	24	.	.
<u>Mediomastus ambiseta</u>	518	285	177	198	563
Cirratulidae					
<u>Chaetozone setosa</u>	.	.	518	.	188
<u>Tharyx</u> sp.	2259	167	549	649	1001
Dorvilleidae					
<u>Stauronereis</u> sp.	.	.	7	.	.
Flabelligeridae					
<u>Brada villosa</u>	3	.	.	.	.
<u>Diplocirrus hirsutus</u>	3	42	45	28	14
<u>Pherusa affinis</u>	.	.	21	.	.
Goniadidae					
<u>Goniada maculata</u>	14	3	.	10	10
<u>Goniada</u> sp.	.	.	3	.	.
Lumbrineridae					
<u>Lumbrineris fragilis</u>	125	70	91	107	83
<u>Lumbrineris tenuis</u>	24	.	.	.	.
<u>Ninoe nigripes</u>	122	70	34	42	83
Maldanidae					
<u>Clymenella torquata</u>	.	.	.	.	3
<u>Maldane sarsi</u>	844	42	174	396	1112
Maldanidae sp.	.	.	7	3	.
Maldanidae sp. 1	.	.	.	.	31
Maldanidae sp. 2	.	.	.	.	3
<u>Praxiella gracilis</u>	7	3	.	34	.

Table EA-A-8 continued.

Nephtyidae					
<u>Aglaophamus cincirrata</u>	177	167	.	177	.
<u>Aglaophamus neotenus</u>	.	.	.	.	3
<u>Nephtys incisa</u>	83	170	232	132	80
Nephtyidae sp.	.	.	.	.	59
<u>Nephtys</u> sp.	.	.	.	.	21
Nereidae					
<u>Nereis</u> sp.	.	.	3	.	3
<u>Nereis virens</u>	3	.	.	.	.
Orbiniidae					
Orbinidae sp.	52	39	.	3	.
<u>Scoloplos acutus</u>	316	170	.	66	70
<u>Scoloplos</u> sp.	.	.	101	.	.
Oweniidae					
<u>Myriochele oculata</u>	500	670	698	670	1400
<u>Owenia fusiformis</u>	232	49	3	112	143
Paraonidae					
<u>Aricidea catherinae</u>	354	76	3	.	.
<u>Aricidea quadrilobata</u>	225	188	868	407	472
<u>Aricidea suecica</u>	.	49	.	.	.
<u>Levinsenia gracilis</u>	365	299	201	170	316
Pectinariidae					
<u>Cistena granulata</u>	3	.	.	.	.
<u>Cistena</u> sp.	.	.	.	.	3
Phyllodocidae					
<u>Eteone longa</u>	257	347	.	112	97
<u>Eteone trilineata</u>	.	.	112	.	.
<u>Phyllodoce groenlandia</u>	3	.	.	.	.
<u>Phyllodoce mucosa</u>	42	198	.	45	14
Polynoidae					
<u>Harmothoe extenuata</u>	.	.	91	.	.
<u>Harmothoe imbricata</u>	59	7	.	14	.
<u>Hartmania moorei</u>	14	.	7	3	10
Sabellidae					
<u>Euchone incolor</u>	310	271	1091	201	456
<u>Laonome</u> sp.	3	.	.	3	10
<u>Potamilla</u> sp.	.	.	3	.	.
Scalibregmidae					
<u>Scalibregma inflatum</u>	7	.	10	3	7
Sigalionidae					
<u>Pholoe minuta</u>	285	383	107	226	188

Table EA-A-8 continued.

Sphaerodoropsis					
<u>Sphaerodoropsis minuta</u>	3	3	.	10	14
Spionidae					
<u>Laonice</u> sp.	3	.	.	.	.
<u>Polydora socialis</u>	.	.	7	.	.
<u>Polydora</u> sp.	94	28	.	3	3
Polynoidae sp.	3	3	.	.	.
<u>Prionospio steenstrupi</u>	1908	545	1324	326	1066
<u>Spio pettibonae</u>	1108	907	743	362	358
Spionidae sp.	3	.	.	.	.
<u>Spiophanes bombyx</u>	3	.	.	.	.
Sternaspidae					
<u>Sternaspis fossor</u>	556	904	660	358	646
Syllidae					
<u>Autolytus</u> sp.?	.	66	.	.	.
<u>Exogone hebes</u>	14	10	.	3	7
<u>Exogone longocirrus</u>	7	.	.	.	.
<u>Exogone verugera profunda</u>	14	.	10	14	39
<u>Syllis cornuta?</u>	.	.	.	.	18
<u>Syllis gracilis</u>	3	.	.	.	.
<u>Syllis</u> sp.	7	3	10	3	7
Syllidae sp.	3	.	.	3	3
<u>Amphitrite</u> sp.	.	.	.	7	.
<u>Polycirrus medusa</u>	.	.	42	.	.
<u>Polycirrus</u> sp.	.	.	.	.	3
Terebellidae					
<u>Terebellides stroemi</u>	18	.	31	7	7
Terebellidae sp.	18	31	24	49	39
Trochochaetidae					
<u>Trochochaeta carica</u>	.	.	.	.	3
<u>Trochochaeta multisetosa</u>	18	31	.	10	10
MOLLUSCA					
Aplacophora					
Crystallophrissonidae					
<u>Chaetoderma nitidulum</u>	21	.	21	18	21
Scaphopoda					
Scaphopoda sp.	.	.	10	.	.
Dentaliidae					
<u>Dentalium entale stimpsoni</u>	.	.	.	7	7
Bivalvia					
Bivalvia A	.	.	.	.	21
Bivalvia unknown	7	.	24	.	49

Table EA-A-8 continued.

Arcticidae					
<u>Arctica islandica</u>	73	55	101	97	107
Astartidae					
<u>Astarte undata</u>	139	3	21	70	66
Cardiidae					
<u>Cerastoderma pinnulatum</u>	7	.	83	18	3
Hiatellidae					
<u>Hiatella arctica</u>	7	.	.	3	.
Lyonsiidae					
<u>Lyonsia hyalina</u>	7	.	.	.	.
Mytilidae					
<u>Crenella decussata</u>	132	14	132	149	159
<u>Modiolus modiolus</u>	14	3	.	.	.
<u>Musculus niger</u>	.	.	.	3	.
Myidae					
<u>Sphenia sincira</u>	153	125	800	431	299
Nuculanidae					
<u>Nuculana tenuisculata</u>	.	.	7	.	.
<u>Yoldia sapotilla</u>	24	.	28	21	14
Nuculidae					
<u>Nucula annulata</u>	3	.	.	.	.
<u>Nucula proxima</u>	3	7	14	.	.
<u>Nucula delphinodonta</u>	935	368	622	1017	876
<u>Nucula tenuis</u>	76	70	76	73	73
Pectinidae					
<u>Plactopecten magellanicus</u>	.	.	3	.	3
Periplomatidae					
<u>Periploma papyratium</u>	91	7	188	185	240
<u>Periploma sp.?</u>	.	.	.	.	3
Solemyacidae					
<u>Solemya sp.</u>	.	14	.	.	.
Tellinidae					
<u>Macoma balthica</u>	.	.	52	.	.
<u>Macoma calcarea</u>	31	34	.	167	.
Thyasiridae					
<u>Thyasira elliptica</u>	.	.	.	10	.
<u>Thyasira flexuosa</u>	94	31	462	341	407

Table EA-A-8 continued.

Veneridae					
<u>Pitar morhuanna</u>	.	.	.	.	3
Gastropoda					
Unknown gastropod	3	.	.	.	.
Gastropoda sp.	.	7	.	.	.
Retusidae					
<u>Retusa obtusa</u>	45	.	.	34	21
Rissoidae					
<u>Alvania pelagica</u>	.	.	.	18	14
Scaphandridae					
<u>Cylichna alba</u>	.	.	18	.	.
<u>Cylichna gouldii</u>	3	.	.	.	.
Turridae					
<u>Oenopota</u> sp.	10	7	.	3	.
<u>Propebela</u> sp.	.	.	.	14	.
ARTHROPODA					
Crustacea					
Amphipoda					
Amphipod A	.	3	.	.	.
Ampeliscidae					
<u>Ampelisca agassizi</u>	.	.	.	.	24
<u>Ampelisca macrocephala</u>	18	.	.	3	.
<u>Haploops tubicola</u>	76	.	42	7	39
Argissidae					
<u>Argissa hamatipes</u>	45	7	11	3	.
Caprellidae					
<u>Aeginina longicornis</u>	.	3	.	.	.
Caprellidae sp.	.	.	.	.	3
Corophiidae					
<u>Erichthonius rubricornis</u>	.	.	.	.	10
Gammaridae					
<u>Casco bigelowi</u>	3	.	.	10	101
Lysianassidae					
<u>Anonyx lilljeborgi</u>	18	21	3	7	.
<u>Hippomedon propinquus</u>	.	.	.	.	7
<u>Hippomedon serratus</u>	.	.	3	.	.
<u>Orchomenella pinquis</u>	.	.	.	3	.

Table EA-A-8 continued.

Oedicerotidae					
Oedicerotidae sp.	10	.	.	.	.
<u>Synchelidium americanus</u>	.	.	14	.	.
Photidae					
<u>Photis macrocoxa</u>	70	18	.	31	115
<u>Photis reinhardi</u>	.	.	59	.	.
Phoxocephalidae					
<u>Harpinia propinqua</u>	7	.	3	10	18
Pleustidae					
<u>Stenopleustes gracilis</u>	.	.	.	3	.
<u>Stenopleustes inermis</u>	.	.	18	.	24
Podoceridae					
<u>Dulichia monocantha</u>	.	.	107	.	.
<u>Dulichia porrecta</u>	.	.	87	.	.
<u>Dulichia</u> sp.	14	3	.	3	3
Stenothoidae					
<u>Metopella angusta</u>	18	.	7	21	.
Cumacea					
Diastylidae					
<u>Diastylis goodsiri</u>	.	.	10	3	7
<u>Diastylis quadrispinosa</u>	31	42	24	34	.
<u>Diastylis sculpta</u>	42	28	.	39	.
<u>Diastylis</u> sp.	.	.	7	.	.
<u>Diastylis</u> sp. A	.	.	.	.	42
<u>Leptostylis ampullacea</u>	.	.	3	.	3
<u>Leptostylis longimana</u>	.	18	39	18	21
Leuconidae					
<u>Eudorella trunculata</u>	21	3	101	24	66
Nannastacidae					
<u>Campylaspis</u> sp.	107	18	49	59	18
Isopoda					
Anthuridae					
<u>Ptilanthura tenuis</u>	10	.	.	21	3
Idoteidae					
<u>Edotea triloba</u>	310	10	31	97	34
Decapoda					
Portunidae					
<u>Carcinus maenas</u>	.	3	.	3	.

Table EA-A-8 continued.

ECHINODERMATA					
Cucumariidae					
<u>Thyone</u> sp.	3	.	.	.	.
Ophiuridae					
<u>Ophiura sarsi</u>	31	3	28	49	18
Phyllophoridae					
<u>Pentamera calcigera</u>	.	.	.	3	3
<u>Pentamera</u> sp.	3	.	.	.	.
HEMICHORDATA					
Harrimaniidae					
<u>Stereobalanus canadensis</u>	.	.	3	.	.
CHORDATA					
Molgulidae					
<u>Bostrichobranchnus pilularis</u>	.	.	21	.	.
<u>Molgula</u> sp.	3	3	.	31	.

TABLE EA-A-9

Summary Of Total Number Of Species
And Individuals/m² Per Station Per Season At CADs

SITE AND COLLECTION DATE	MEAN # INDIVIDUALS	NO. OF SPECIES
North Site Sept. 1985	19,579	100
South Site Sept. 1985	16,472	70
Ref Site May 1985	16,867	90
Ref Site Sept. 1985	9,999	92
Ref Site Jan. 1986	15,976	99

TABLE EA-A-10

Numbers Of Species And Individuals For 0.1m²
 Smith/McIntyre Samples, CADS,
 September 1985

<u>Taxa/Sample</u>					<u>Individuals/Sample</u>		
<u>Station</u>	<u>Sieve</u>						
	<u>Size</u>	<u>1.0</u>	<u>0.5</u>	<u>Total</u>	<u>1.0</u>	<u>0.5</u>	<u>Total</u>
North	A	57	60	78	621	1527	2148
	B	59	40	68	882	911	1793
	C	73	45	77	1271	640	1911
				<u>74.3+5.5</u>			<u>1951+181</u>
South	A	37	47	61	420	1842	2262
	B	46	35	54	656	717	1373
	C	51	21	51	815	406	1221
				<u>55.3+5.1</u>			<u>1620+561</u>
Ref	A	45	43	65	258	480	738
	B	56	36	66	508	415	923
	C	59	48	74	608	694	1302
				<u>68.3+4.9</u>			<u>988+288</u>

TABLE EA-A-11

Mean Density Of Oligochaetes, And Top 3 Species Of Polychaetes,
Crustaceans and Molluscs (plus Arctica) Per Season
At The Reference Station At CADS.

REFERENCE STATION
MAY 1985

SPECIES	MEAN DENSITY #/m ²
OLIGOCHAETA	5243
POLYCHAETA	
<u>Prionospio steenstrupi</u>	1324
<u>Euchone incolor</u>	1091
<u>Aricidea quadrilobata</u>	868
MOLLUSCA	
<u>Sphenia sincira</u>	800
<u>Nucula delphinodonta</u>	622
<u>Thyasira flexuosa</u>	462
<u>Arctica islandica</u>	101
CRUSTACEA	
<u>Dulichia monocantha</u>	107
<u>Eudorella trunculata</u>	101
<u>Dulichia porrecta</u>	87

REFERENCE STATION
SEPTEMBER 1985

SPECIES	MEAN DENSITY #/m ²
OLIGOCHAETA	1765
POLYCHAETA	
<u>Myriochele oculata</u>	670
<u>Tharyx sp.</u>	649
<u>Aricidea quadrilobata</u>	407
MOLLUSCA	
<u>Nucula delphinodonta</u>	1017
<u>Sphenia sincira</u>	431
<u>Thyasira flexuosa</u>	341
<u>Arctica islandica</u>	97
CRUSTACEA	
<u>Edotea triloba</u>	97
<u>Campylaspis sp.</u>	59
<u>Diastylis sculpta</u>	39

REFERENCE STATION
January 1986

SPECIES	MEAN DENSITY #/m ²
OLIGOCHAETA	4162
POLYCHAETA	
<u>Myriochele oculata</u>	1400
<u>Maldane sarsi</u>	1112
<u>Prionospio steenstrupi</u>	1066
MOLLUSCA	
<u>Nucula delphinodonta</u>	876
<u>Thyasira flexuosa</u>	407
<u>Sphenia sincira</u>	299
<u>Arctica islandica</u>	107
CRUSTACEA	
<u>Photis macrocoxa</u>	115
<u>Casco bigelowi</u>	101
<u>Eudorella trunculata</u>	66

Rank Abundance Of Top Ten Species
At Reference Station Per Season at CADS

May 1985		Mean no./m ²
1.	OLIGOCHAETA	5030
2.	<u>Prionospio steenstrupi</u>	1324
3.	<u>Euchone incolor</u>	1091
4.	<u>Aricidea quadrilobata</u>	868
5.	<u>Sphenia sincira</u>	800
6.	<u>Spio pettibonae</u>	743
7.	<u>Myriochele oculata</u>	698
8.	<u>Sternaspis fossor</u>	660
9.	<u>Nucula delphinodonta</u>	622
10.	<u>Tharyx</u> sp.	549

Sept. 1985		Mean no./m ²
1.	OLIGOCHAETA	1765
2.	<u>Nucula delphinodonta</u>	1017
3.	<u>Myriochele oculata</u>	670
4.	<u>Tharyx</u> sp.	649
5.	<u>Sphenia sincira</u>	431
6.	<u>Aricidea quadrilobata</u>	407
7.	<u>Maldane sarsi</u>	396
8.	<u>Spio pettibonae</u>	362
9.	<u>Sternaspis fossor</u>	358
10.	<u>Thyasira flexuosa</u>	341

Jan 1986		Mean no./m ²
1.	OLIGOCHAETA	4162
2.	<u>Myriochele oculata</u>	1400
3.	<u>Maldane sarsi</u>	1112
4.	<u>Prionospio steenstrupi</u>	1066
5.	<u>Tharyx</u> sp.	1001
6.	<u>Nucula delphinodonta</u>	876
7.	<u>Sternaspis fossor</u>	646
8.	<u>Mediomastus ambiseta</u>	563
9.	<u>Aricidea quadrilobata</u>	472
10.	<u>Euchone incolor</u>	456

TABLE EA-A-13

Mean Density Of The Five Dominant Species
From Each Station At CADS, September 1985

NORTH SITE

SPECIES	#/m ²
Oligochaeta	4250
<u>Tharyx</u> sp.	2259
<u>Prionospio steenstrupi</u>	1908
<u>Spio pettibonae</u>	1108
<u>Nucula delphinodonta</u>	935

SOUTH SITE

Oligochaeta	8958
<u>Spio pettibonae</u>	907
<u>Sternaspis fossor</u>	904
<u>Myriochele oculata</u>	670
<u>Prionospio steenstrupi</u>	545

REFERENCE SITE

Oligochaeta	1765
<u>Nucula delphinodonta</u>	1017
<u>Myriochele oculata</u>	670
<u>Tharyx</u> sp.	649
<u>Sphenia sincira</u>	431

TABLE EA-A-14

Total Fish and Shellfish Catch from the Four Net Deployments
at CADS in September 1985

(The total number of individuals caught, as well as the
community profile; e.g. juvenile, adult or spawning (J,A,S) is given)

SPECIES

Dogfish (<u>Squalus acanthias</u> L.)	144 A
Thorny skate (<u>Raja radiata</u> Donovan)	8 A
Smooth skate (<u>Raja senta</u> Garman)	15 A
Longhorn sculpin (<u>Myoxocephalus octodecemspinosus</u> Mitchell)	5 A
Sea raven (<u>Hemitripterus americanus</u> Gmelin)	1 A
Red hake (<u>Urophycis chuss</u> Walbaum)	10 J,A
Silver hake (<u>Merluccius bilinearis</u> Mitchell)	9 J,A,S
Mackerel (<u>Scomber scombrus</u> L.)	1 ?
Butterfish (<u>Peprilus triacanthus</u> Peck)	41 J
Winter flounder (<u>Pseudopleuronectes americanus</u> Walbaum)	2 A
Wolffish (<u>Anarhichas lupis</u> L.)	1 A
Goosefish (<u>Lophius americanus</u> Valenciennes)	2 A
Blueback herring (<u>Alosa aestivalis</u> Mitchell)	2 J
Lobster (<u>Homarus americanus</u>)	15 A
Cancer crab (<u>Cancer borealis</u> Stimpson)	111 J,A
Green crab (<u>Cancinus maenas</u> L.)	1 A

APPENDIX 1

PUBLIC VIEWS AND RESPONSES

PUBLIC VIEWS AND RESPONSES

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COPIES OF CORRESPONDENCE RECEIVED DURING REVIEW OF DRAFT REPORT	
Town of Ogunquit - Board of Selectmen - June 19, 1990.	
New England Division - May 9, 1990.	
Maine Department of Environmental Protection - April 3, 1990.	
National Marine Fisheries Service - March 28, 1990.	
U.S. Fish and Wildlife Service - March 1, 1990.	
Town of Ogunquit - Board of Selectmen - February 21, 1990.	
New England Division - January 30, 1990.	
Murray, Plumb & Murray (Town of Ogunquit's Attorneys) - January 10, 1990.	
U.S. Environmental Protection Agency - January 10, 1990.	
Maine Department of Marine Resources - January 2, 1990.	
Maine Department of Environmental Protection - Bureau of Land Quality Control - December 26, 1989.	
<u>SECTION C</u>	
COPIES OF CORRESPONDENCE RECEIVED BEFORE REVIEW OF DRAFT REPORT	
U.S. Environmental Protection Agency - Wetlands Unit - February 19, 1988.	
National Marine Fisheries Service - Habitat Conserv. Branch - December 11, 1987.	
Maine Historic Preservation Commission - November 3, 1987.	
Maine Department of Environmental Protection - Bureau of Land Quality Control - September 14, 1987.	
Maine Department of Environmental Protection - Bureau of Land Quality Control - July 8, 1987.	
U.S. Environmental Protection Agency - Wetlands Unit - April 13, 1987.	
U.S. Environmental Protection Agency - Wetlands Unit - March 17, 1987.	
New England Division - February 13, 1987.	
Town of Ogunquit - Town Manager - October 6, 1986.	
New England Division - Division Engineer - October 2, 1986.	
Town of Ogunquit - Town Manager - August 1, 1986.	
New England Division - Enforcement Section - July 23, 1986.	
Town of Ogunquit - Town Manager - May 19, 1986.	
Town of Ogunquit - Town Manager - February 19, 1985.	
Maine Historic Preservation Commission - February 6, 1985.	
Town of Ogunquit - Town Manager - February 5, 1985.	
Town of Ogunquit - Town Manager - December 20, 1984.	

Town of Ogunquit - Town Manager - December 7, 1984.
U.S. Fish and Wildlife Service - Ecological Services Branch -
October 4, 1984.
National Marine Fisheries Service - Habitat Protection Branch -
June 11, 1984.
U.S. Fish and Wildlife Service - Ecological Services Branch -
May 30, 1984.
New England Division - May 7, 1984.
Office of the Chief of Engineers - April 19, 1984.
New England Division - March 23, 1984.
Office of the Chief of Engineers - September 13, 1982.
New England Division - July 12, 1982.
Town of Ogunquit - Town Manager - April 21, 1982.
New England Division - March 8, 1982.
New England Division - May 15, 1981.
Town of Ogunquit - Town Manager - May 6, 1981.
Ogunquit Village Corporation - Village Manager - July 12, 1978.

APPENDIX 1

SECTION A

PUBLIC INVOLVEMENT
AND AGENCY COORDINATION

SECTION A

PUBLIC INVOLVEMENT PROGRAM

Views of Government agencies were obtained through telephone calls, written correspondence and meetings. Meetings were held with Federal, state and local officials, private interests and concerned citizens to ascertain their views on the proposed improvement project. Their aid was also enlisted to determine community needs and trends and to relay comments received during the coordination phase.

The town of Ogunquit first contacted the New England Division on July of 1978 concerning commercial navigation problems due to inadequate project depth. Priorities and workload in the Division's navigation program did not permit initiation of study efforts until the spring of 1981. At that time, the town resubmitted its request for a small navigation study in a letter dated May 6, 1981.

A reconnaissance investigation was carried out as the first step in conducting a Section 107 small navigation study. The report was approved on September 3, 1982 by the Office of the Chief of Engineers as a basis for continued study. Initiation of Feasibility Phase studies was approved on April 19, 1984.

Harbor users and local officials detailed navigation problems and practices at a public meeting held in the Ogunquit town offices on April 22, 1981. Local and state officials conducted an environmental reconnaissance of the site on March 22, 1984. Meetings to coordinate disposal site location efforts were held in Ogunquit on October 22, 1984 and December 5, 1984. An economics workshop with commercial operators was conducted at the town offices on March 27, 1985.

Town efforts to establish a harbor management ordinance led to the present dispute involving the town, the New England Division and the Maine State Legislature concerning mooring assignment priorities for residents and local tax-payers. The original local ordinance not only prioritized assignment and waiting lists according to residency status, but also set different fee schedules for moorings using the same bias. Negotiations with Corps and state officials resulted in the revision of the ordinance to eliminate separate fee schedules. The state legislature is presently reviewing state harbor management regulations with a view toward eliminating the residency status bias. Toward this end the Local Cooperation Agreement for the proposed improvement will specify that mooring assignments and waiting lists must be open to all on an equal basis, within the improved area and within all other aspects of the Federal project and municipal shore support facilities.

AGENCY COORDINATION

Throughout the course of the study, interested Federal, state and local agencies and offices were kept informed of the study progress and findings. The various interested agencies were given the opportunity to review preliminary plans and comment on project features. The following are responses to comments received to date:

FEDERAL AGENCIES

1. U.S. Environmental Protection Agency

Comment 1

In their letter of March 17, 1987, the agency responded to the New England Division's request for review of the proposed project pursuant to the Clean Air Act. The agency did not provide any comments relative to Clean Air Act provisions.

The agency did, however, express concern over levels of PCB's exhibited by the bulk chemistry test results on the material to be dredged. The agency made specific recommendations on dewatering and disposal site precautions to prevent PCB contamination of groundwater or the terrestrial environment.

Response

The testing program referred to by EPA was conducted in 1983. Two sites were tested for PCB's at that time, one site in the lower half of the cove and one site in the upper reaches. The site in the lower reach exhibited a PCB bulk chemistry level of 0.02 ppm, at the detection level of the instrument. PCB levels from the one site in the upper cove exhibited a level of 0.162 ppm. However, the upper cove will not be dredged under the proposed plan. Reasonable precautions, as suggested by EPA, will be taken to protect the dewatering site and control runoff into the cove under the upland disposal option.

Comment 2

The agency concurred with the time of year restriction on dredging activities as stated in the draft EA.

2. National Marine Fisheries Service

Comment

In their letter of June 11, 1984, the agency stated that they "have identified the presence of no endangered or threatened species within the project area".

3. U.S. Fish and Wildlife Service

Comment 1

In their letter of May 30, 1984 the service stated that "no Federally listed or proposed species under our jurisdiction are known to exist in the project impact area.

Comment 2

The service provided a Planning Aid letter dated October 4, 1984 under the provisions of the Fish and Wildlife Coordination Act. In that letter the service stated that shellfish and finfish species, while present "are not considered to be a significant commercial resource within this area". The service also stated that "adverse impacts could be significantly reduced by limiting project construction to the period of least biological activity, late fall to early spring".

Response

The New England Division concurs with the time of year restriction on dredging activities.

Comment 3

The service stated that "We do not object to the placement of dredged material at either of the upland sites currently under consideration". The service also suggested that the ledge to be removed be used to create lobster habitat offshore.

Response

The recommended plan calls for disposal of all dredged material at the Cape Arundel ocean dumping site. Separation of the rock material would involve additional costs which must be borne entirely by a non-Federal interest. Should Maine DMR propose an acceptable site and a non-Federal interest agree to provide the additional costs, then this proposal will be considered further.

STATE AGENCIES

1. Maine Historic Preservation Commission

Comment

In a letter dated February 6, 1985, the State Historic Preservation Officer stated that "this project will have no effect upon any structure or site of historic, architectural or archaeological significance".

2. Maine Department of Environmental Protection

Comment

The Maine DEP Bureau of Land Quality Control, in a letter dated July 8, 1987, stated that the dredge spoil material is considered to be Class II material and can only be disposed in a licensed landfill or through ocean dumping at an approved site.

Response

The two upland disposal sites proposed by the town are not currently licensed to accept Class II material and are not likely to qualify for such a license. Therefore, the recommended disposal plan is ocean dumping at the designated ocean dump site near Cape Arundel, Maine.

APPENDIX 1

SECTION B

COPIES OF CORRESPONDENCE
RECEIVED DURING REVIEW
OF DRAFT DETAILED PROJECT REPORT

SUMMARY OF RESPONSES TO DRAFT REVIEW COMMENTS

Responses to Murray, Plumb & Murray (Town Attorneys) Comments (January 10, 1990):

An item by item letter addressing the town's concerns regarding the proposed improvement project was sent by NED on January 30, 1990. A copy of the letter is included in the correspondence section of the report.

Responses to Town of Ogunquit's Concerns raised in February 21, 1990 Letter:

As a result of concerns raised in this letter as well as a public meeting held in Ogunquit on January 30, 1990, NED analyzed the impact dredging would have on the stability of the harbor's bulkheads. It was determined that certain bulkheads would be negatively impacted by the proposed plan. A revised plan avoiding these impacts was designed. A buffer zone located in critical areas would provide the necessary distance for which dredging to a 7-foot depth could be safely performed. The project limits were redefined to incorporate this buffer zone. Though a 0.3 acre loss of overall anchorage space is incurred, the project intent of deepening 2.1 acres would still be maintained. These findings were discussed with town officials on June 19, 1990 and are acceptable to them, as indicated in their recent letter of support.

Responses to Fish and Wildlife Comments (March 1, 1990):

Two sites, "C" and "F", within Perkins Cove were sampled for PCB contamination. Neither site exceeded Class II (moderate) sediment classification for PCB. Two ambient samples of water were taken at locations "C" and "F" to perform elutriate tests. Results from the elutriate test, which simulate effects of dredging activity, are below EPA Water Quality Criteria. As there is no known source of PCB contamination into Perkins Cove and the results of elutriate testing do not exceed EPA WQC, the material to be dredged is considered acceptable for ocean disposal. No further testing is considered necessary.

Responses to National Marine Fisheries Service Comments (March 28, 1990):

See response to Fish and Wildlife letter.

OGUNQUIT

Beautiful Place by the Sea

MUNICIPAL OFFICES
SCHOOL STREET
OGUNQUIT, MAINE 03907
207-646-5139
207-646-9326 ASSESSOR/CEO

June 19, 1990

Colonel Daniel M. Wilson
Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149

Dear Colonel Wilson:

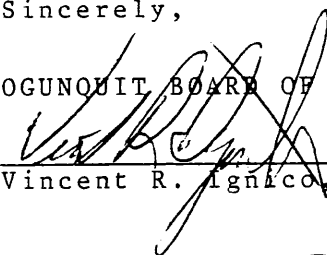
Following a meeting with Chris Hatfield of your staff on Tuesday night, June 18, 1990, we are pleased to send you this letter.

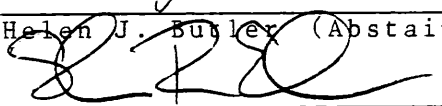
The Board of Selectmen has reviewed the revised plan for a seven foot dredge of Perkins Cove and it has found that plan to be acceptable. The Board understands that a five foot maintenance dredge of the rear of the Cove is included in the revised plan. The Board does support the revised plan and it agrees to submit the request for local participation to the voters at the appropriate time.

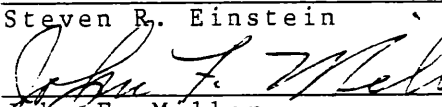
The Board does wish to emphasize that the cost(s) of doing the dredging must be clearly defined prior to submission of the request to the voters and prior to the execution of the revised Local Cooperation Agreement.

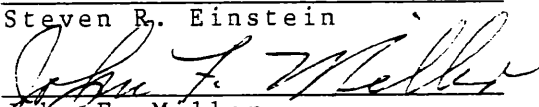
Sincerely,

OGUNQUIT BOARD OF SELECTMEN


Vincent R. Ignico, Chairman


Helen J. Butler (Abstained)


Steven R. Einstein


John F. Miller


Raymond W. Norris

OBOS/js



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

May 9, 1990

Planning Directorate
Impact Analysis Division

Mr. Dean C. Marriott, Commissioner
Maine Department of Environmental Protection
State House Station 17
Augusta, Maine 04333

Dear Mr. Marriott:

This letter is written in response to your letter of April 3, 1990 regarding issuance of a Water Quality Certification and Federal Consistency determination (WQC/CZM) for the navigation improvement project at Perkins Cove, Ogunquit, Maine. The Maine Department of Environmental Protection (DEP) denied issuance of WQC/CZM due to additional information required under the new State legislation L.D. 1955. The additional information requested by DEP prior to issuance of WQC/CZM included the following items:

- 1) The collection and submittal of dredged material test results to DEP within one year of application for WQC/CZM.
- 2) Circulation of a public notice on the disposal route proposed by the COE in the area adjacent to the proposed route.
- 3) Submission of a copy of the application to each municipality adjacent to any proposed marine and estuarine disposal site and route.

The U.S. Army Corps of Engineers (Corps) tested dredged material at Perkins Cove for bulk chemical testing in 1983. The material was found to be suitable for ocean disposal. The Corps reevaluated the material this year and determined that it still met the criteria for ocean disposal. The Corps believes that additional testing is not required. The testing required under the new State legislation is the responsibility of the local sponsor, as are the other requirements identified above. Once the local sponsor has performed the necessary requirements, that information will be submitted to the DEP.

It is the understanding of the Corps, that except for the above requirements, the State has no other objections to the project. We assume that once the information is provided the proposed project will be determined to be consistent with CZM and be eligible for a 401 Water Quality Certification.

In addition we would like to take the opportunity to discuss the impacts of this new legislation on Corps activities in the State of Maine. We will be contacting your office to determine a time, place, and agenda for this meeting. Any questions or comments can be directed to Ms. Catherine Demos at (617) 647-8231.

Sincerely,

Joseph L. Ignazio
Director of Planning

Copies Furnished:

Town of Ogunquit Municipal Offices
Attn: Mr. McMahon, Town Manager
School Street
Ogunquit, Maine 03907

cc: Ms Demos
Mr. Hatfield-114S
Mr. Hubbard
IAD Files
Plng Dir Files
Read File



STATE OF MAINE

Department of Environmental Protection

MAIN OFFICE: RAY BUILDING - HOSPITAL STREET AUGUSTA
MAIL ADDRESS: STATE HOUSE STATION AUGUSTA 04903

10755B0008

JOHN R. McKERNAN, JR.
GOVERNOR

DEAN C. MARRIOTT
COMMISSIONER

April 3, 1990

Joseph Ignazio, Chief - Planning Division
Department of the Army, New England Division
Corps of Engineers, 424 Trapelo Road
Waltham, Mass. 02254-9149

Re: Perkins Cove Dredging/Ogunquit, Maine

Dear Mr. Ignazio:

Please accept this in response to your March 23, 1990 letter requesting state Federal Consistency Concurrence and Water Quality Certification under the Coastal Zone Management Act (CZM) for the Perkins Cove dredging project at Ogunquit, Maine. In your letter you note that test results of the 1983 dredge spoil samples demonstrate that the material is suitable for ocean disposal and no further testing is required. Please be advised that the Department disagrees with the Corps Consistency Determination and denies the issuance of a Water Quality Certification at this time due to lack of information.

In accordance with the Federal Consistency regulations (15 CFR 930.42.b), the following information is requested:

1. Collection and testing of the dredge spoils in accordance with a protocol approved by the Department. Acceptable protocol was indicated in a letter to you dated December 26, 1989, copy attached. Test results must be completed within one year prior to submission of an application under the CZM/Federal Consistency Program.
2. Information on the proposed route and evidence that the Corps has published notice of the proposed route by which the dredged materials are to be transported to the disposal site in a newspaper of general circulation in the area adjacent to the proposed route.
3. Evidence that the Corps has submitted a copy of the application to each municipality adjacent to any proposed marine and estuarine disposal site and route.

This information is necessary in order to enable the Department to make the positive finding that the project meets the standards of the core laws of the Coastal Zone Management Act. Without this information the Department does not concur with the Corps Consistency Determination and denies the issuance of a Water Quality Certification at this time.

printed on recycled paper

Letter to Joseph Ignazio
Army Corps of Engineers
Perkins Cove Dredging/Ogunquit, Maine

If you wish to pursue the project, please make arrangements to submit the required information (or a schedule of when the information will be available) to the Department within 30 days from the date of this letter.

In the event that you have any questions or wish to discuss the matter please feel free to contact Mr. David Silver of my staff at (207) 289-2111.

Sincerely,



DEAN MARRIOTT
Commissioner
Department of Environmental Protection

cc: Debrah Richard, Land Bureau Director, DEP
Don Witherill, Natural Resources Division Director, DEP
William Laflamme, Natural Resources Supervisor, DEP
David Silver, Natural Resources Licensing, DEP
Robert Blakesley, State Planning Office
Catherine Demos, Planning Division, Department of the Army, New England
Division, Corps of Engineers, 424 Trapelo Road, Waltham, Mass. 02254-9149
NOAA/OCRM Director, c/o Patricia Scott, Assistant Regional Manager, North
Atlantic Region, U.S. Dept. of Commerce, National Oceanic and
Atmospheric Admin., National Ocean Service, Office of Ocean and Coastal
Resources Management, Washington, D.C. 20235

DM/ds/DSDREDGEO



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Northeast Region
Management Division
Habitat Conservation Branch
One Blackburn Drive
Gloucester, MA 01930-2298

March 28, 1990

Joseph L. Ignazio
Chief, Planning Division
New England Division
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254

Dear Mr. Ignazio:

While we have no objection to the proposed navigation improvements for the Josias River at Perkins Cove, Ogunquit, Maine, we note that the water column value outside the project area at sampling station "F" exceeded the PCB water quality criterion. We also note that the bulk sediment sample for PCBs at that same station is .2 ppm which is acceptable. Because of the lack of industrial discharge in the Josias River and the low PCB value for the bulk sediment test we do not suspect PCB contamination in the project area. However, we are concerned about the presence of PCBs as PCBs do not occur naturally. Since only one PCB sediment sample and elutriate test were accomplished, additional sampling for PCBs in the project area should be conducted to ensure that the dredged material is not contaminated.

Project plans call for deepening the existing access channel and increasing the anchorage area. Approximately 20,000 cubic yards of dredge material would be removed and disposed of at the Cape Arundel disposal site in Maine.

We do not anticipate any long term adverse impacts to occur from this project provided the work is accomplished in the winter months as proposed in the Detailed Project Report.

If you have any questions please contact Chris Mantzaris at 508/281-9346.

Sincerely,

Thomas E. Bigford,
Branch Chief





United States Department of the Interior

FISH AND WILDLIFE SERVICE
400 RALPH PILL MARKETPLACE
22 BRIDGE STREET
CONCORD, NEW HAMPSHIRE 03301-4901

Joseph L. Ignazio
Chief, Planning Division
New England Division
Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254

March 1, 1990

Dear Mr. Ignazio:

This is in response to your letter of December 1, 1989, requesting our views on the draft Detailed Project Report and Environmental Assessment (DPR) for the proposed navigation improvement project for the Josias River at Perkins Cove, in Ogunquit, Maine. This is our final Fish and Wildlife Coordination Act Report on the project, in accordance with Section 2(b) of the Fish and Wildlife Coordination Act, 16 U.S.C. 661 et seq.

The proposed plan for navigation improvements at Perkins Cove consists of deepening the existing access channel from -5 feet mean low water (MLW) to -7 feet MLW and increasing the depth of 2.1 acres of the 4.2-acre anchorage from -5 feet MLW to -7 feet MLW. There would be no alteration of the authorized project limits. Approximately 220 cubic yards of rock and 19,700 of mixed sand, gravel and silt material would be removed and disposed of offshore of Cape Arundel, Maine.

We provided preliminary comments on the proposed navigation improvement project early in the planning process. Our letter of May 30, 1984 noted that no Federally listed threatened or endangered species were known to occur in the project vicinity. On October 4, 1984 we identified fish and wildlife resources and habitat conditions in the project area. We also identified potential resource impacts of the project and recommended measures to avoid those impacts.

The draft DPR generally provides a good description of fish and wildlife resources in the project area and potential project impacts. The benthic sampling results from the proposed dredge site and the proposed disposal site demonstrate benthic communities of relatively low diversity and numbers. Dredging and disposal operations at these sites would eliminate local benthic communities as stated in the Environmental Assessment of the DPR. Recolonization of the disturbed areas by opportunistic benthic organisms would be expected to occur within a few years. We would expect no far field impacts to marine resources at either the proposed dredge or disposal sites as a result of dredging or disposal activities. Limiting the project construction to the winter months as proposed in the DPR will minimize adverse impacts to resident shellfish and most finfish species.

Though metals were sampled from five locations within the project area, the organochlorine analyses of sediments, elutriates and ambient water were somewhat limited (page EA-9). Limiting organochlorine sampling to one location within the project area is generally not sufficient to characterize an area for these contaminants. Since only one PCB sediment and one PCB

elutriate test were conducted for the project area, it is misleading to state that all but one of the water quality criteria have been met, with the one PCB water column sample being the exception (page EA-6). We have no reason to suspect the presence of elevated PCBs given the lack of industrial discharges to the cove and/or the Josias River, yet the water column value at station "F" (outside of the project area) exceeded the PCB water quality criterion. Even though the bulk sediment sample level for PCBs at "F" was moderately low (.2 ppm) the associated water column level exceeded the water quality criterion for PCB. We recommend that further sampling for PCBs in the sediments and water column be undertaken within the project area to ensure that dredged material is not contaminated.

We appreciate the opportunity to review the draft Detailed Project Report. Should you have any questions regarding our comments, please contact Susi von Oettingen at (603) 225-1411.

Sincerely yours,

A handwritten signature in black ink, reading "Gordon E. Beckett". The signature is fluid and cursive, with a long horizontal stroke at the end.

Gordon E. Beckett
Supervisor
New England Field Office

OGUNQUIT

Beautiful Place by the Sea

MUNICIPAL OFFICES
SCHOOL STREET
OGUNQUIT, MAINE 03907
207-646-5139
207-646-9326 ASSESSOR/CEO

February 21, 1990

Colonel Daniel M. Wilson
Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149

Dear Colonel Wilson:

This responds to your letter of December 4, 1989 in which you invited our review and comment on the draft Report and the proposed Local Cooperation Agreement between the Town and the Corps for the dredging of Perkins Cove.


As you know, the Board of Selectmen has had several discussions regarding both the Report and the proposed LCA. The responses to the questions posed by the Town Attorney regarding the LCA have been received and reviewed by the Board. A very informative meeting was held on January 30, 1990 in which Messrs. Hatfield, Coleman and Bochino from your staff participated.

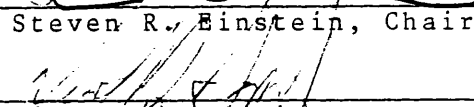
The purpose of this letter is to let you know that the Town is interested in obtaining a 7' dredge combined with a maintenance dredge in the rear of the Cove if the final cost estimates are affordable and if the existing bulkheads are not undermined as a result. We understand that discussions regarding the bulkheads have taken place between the Town Manager and Chris Hatfield. The Town would be willing to provide its share of the cost of doing the dredging providing that cost can be clearly defined prior to the execution of a contract.

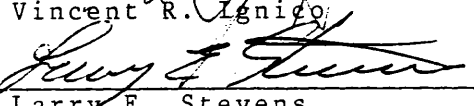
In the alternative, if the final cost estimates for a 7' dredge are prohibitive or if the bulkheads present a problem, the Town wishes to have a 5' maintenance dredge performed as soon as possible.

Sincerely,

OGUNQUIT BOARD OF SELECTMEN


Steven R. Einstein, Chair


Vincent R. Ignico


Larry E. Stevens

OBOS/js



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

30 JAN 1990

Planning Division
Coastal Development Section

Murray, Plumb & Murray
Attorneys at Law
75 Pearl Street
Portland, Maine 04101

Dear Mr. Murray:

The following are submitted in response to your letter, dated January 10, 1990, concerning the Local Cooperation Agreement (LCA) for the Josias River at Perkins Cove navigation improvement project. You are reminded that the LCA is technically "draft" and needs to be agreed with in principle at this time. Actual signature and execution by both parties won't be accomplished until project improvement Plans and Specifications are substantially complete.

Our responses are keyed to your numbered comments as follows:

1. It is not necessary to include the project document into the LCA. The project description in the report and contained in the LCA, Article Ia., are the same.
2. The Government has regulations covering situations where excessively high bids are received. The cap is 25% over the Government estimate. If this is the case, the Government estimate would be re-evaluated before continuing with bid procedures. Overruns are a different situation. The Government estimate includes a contingency allowance that may cover all costs, however, unforeseen conditions may cause an overrun. The current cost is our best estimate. The actual cost may also go up or down, depending on the market conditions at the time of award.
3. After the project is constructed, if maintenance of the General Navigation Facilities (GNF) remains at the same level (currently estimated at 400 cy annually) as it was before the improvement was constructed, there would be no additional local sponsor contribution to the GNF maintenance dredging. However, if maintenance dredging is required and the amount exceeds that which is currently needed to maintain the existing project, then the local sponsor would be responsible for 44% of the cost of the difference.
4. Any maintenance dredging required under this paragraph would be outside of the Federal project. This dredging is totally a local responsibility and is needed to ensure the project benefits are realized.

5. The disposal area could change in the future. In this event it is a local responsibility to find a new area. This paragraph should remain in the agreement.

6. The final construction costs will be determined during Plans & Specifications and included in the final LCA. The current estimate for construction is \$517,000 of which the local sponsor is required to contribute 33.4% or \$173,000.

7. The intent of this paragraph is to avoid encroachment into the Federal project. The exact distance between any structure and the project is site specific and dependent on bottom topography and cannot be determined in advance for all cases.

8. The purpose of the priority cited is to maintain the commercial nature of only the 2.1 acres to be improved and that is all.

9. Although no monitoring is currently anticipated, it could become necessary for future maintenance. Therefore, the paragraph should not be changed.

10. With regard to maintenance of the project's ancillary facilities, yes, the Town is fulfilling its obligations. However, it has been brought to our attention that the Town's mooring policies are not adequate in light of the Government's policy of "open to the use of all on equal terms".

11. This item refers to paragraph b., rather than d. Wasteweirs and stilling basins, or their equivalent, would be involved in hydraulic dredging operations. The paragraph should not be changed, since that type of dredging may at some future time become necessary.

12. Credits given a local sponsor are given towards the portion payed over time (the second 10%) when that method of payment is chosen. They are real estate, and facilities and utility relocation costs. This is spelled out in article IV a., b. and c. There are currently no credits anticipated with this project.

13. Only real estate interests needed for project construction would be acquired. Presently, there is no real estate acquisition required as the work can be done from the harbor.

14. The regulations referred to pertain to the operation and maintenance of the Federal project only, and not to the management of the overall harbor. It may not be possible to prescribe in advance all requirements or facilities necessary to realize anticipated project benefits. The Town should understand that it is agreeing to do its part in assuring that project benefits are realized over the life of the project.

15. Local service facilities are the responsibility of non-Federal interests and may be required as part of the local cooperation agreements. They are:

- o Piers, wharfs, floats, and other structures or devices at or near the shoreline, where vessels can moor or be held for the purpose of loading and unloading cargo and passengers, fueling, repairs and other servicing, or to await orders to use.
- o Berthing, mooring, and anchorage areas where vessels can stay whatever time is required without obstructing the channels or other water areas provided for the movement of vessels.
- o Open areas, structures, and/or equipment on the shore for receiving, storing and transferring cargo and passengers (port facilities); (harbor facilities); and/or launching boats via ramps or equipment, storing boats on land, parking vehicles, and public access areas and restrooms (recreation facilities).
- o Utility services such as telephone, water, and power; and public services such as police and fire protection, as needed.
- o Land access via roadways and/or railroads as needed, and water access channels or extension of main and branch channels that serve only facilities for the exclusive use of private beneficiaries and are not open to the general public on equal terms.

16. The paragraph in question requires the local sponsor to maintain all related navigation facilities as defined in item 15. It does not pertain to the maintenance of the Federal project.

17. The local sponsor is responsible for maintaining all related navigation facilities as defined in item 15. Again, it should be understood that related navigation facilities are those which are needed, in conjunction with the project itself, to realize anticipated project benefits.

18. Maintenance of the project, as described in item 3, would continue until the Federal participation limits listed are reached. Once reached, project maintenance would become the sole responsibility of the local sponsor. However, based on the small amounts of material needed to maintain this project, the possibility of reaching these limits are remote.

19. The period of Federal participation is limited to the greater of \$4,500,000 or 2.25 times the Federal costs of the project, including costs for planning studies and construction. As long as these limits are not reached, the project's nature (commercial vs. recreational) does not change, and the funds are available, Federal participation would continue.

20. The town would always be responsible for its share of operation and maintenance as specified in items 3, 18 and 19. In addition, if the town adopts an acceptable "open to all" mooring policy in order to have the project improvement constructed, that should become a permanent policy.

21. The current Federal policy of "open to the use of all on equal terms" originated in the Rivers and Harbor Act of 1919 (33 USC 551). Section 107 of the Continuing Authorities Program also allows the Chief of Engineers to require additional items of local cooperation.

The definition was developed to provide broad criteria for comparison with harbor management plans to assure that various diverse approaches accomplish the same essential purpose in terms of public access. Ogunquit's current mooring policy does not meet the definition shown in Exhibit B.

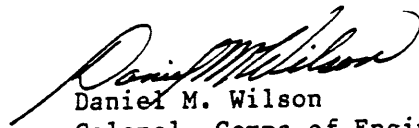
Differential fees are consistent with the definition provided that no arbitrary distinction is made among project users. The time period for recovering costs from non-resident users would have to be identical to the time period of recovering costs from resident users. There would, of course, be a slight cost differential based on the portion of individual resident users' taxes already applied to local costs associated with the project.

22. The Corps requires all communities to abide by the same rules; all are treated equally.

23. The intent was to advise the town that the "open to all" issue would remain even if non-Federal funds were used to deepen part of the existing Federal project. This issue would have to be satisfactorily resolved before a permit could be issued.

If you should have any further questions, please feel free to contact me at (617)647-8220 or the Project Manager, Mr. Hatfield, at (617)647-8520.

Sincerely,



Daniel M. Wilson
Colonel, Corps of Engineers
Division Engineer

MURRAY, PLUMB & MURRAY

ATTORNEYS AT LAW
75 PEARL STREET
PORTLAND, MAINE 04101

PETER L. MURRAY
E. STEPHEN MURRAY
PETER S. PLUMB
JOHN C. LIGHTBODY
THOMAS C. NEWMAN
JOHN C. BANNON
JANE B. HARTWELL
MICHAEL L. PARKER
SUSAN D. THOMAS
RICHARD L. O'MEARA
ERIC M. MEHNERT
DAVID M. STEINBERG
ANN M. COURTNEY

CHARLTON S. SMITH
COUNSEL

TEL. 207-773-5651

TELEFAX: 207-773-8023

January 10, 1990

Colonel Daniel M. Wilson
Department of the Army
Corps of Engineers
New England Division
424 Trapelo Road
Waltham, Massachusetts 02254-9149

Re: Town of Ogunquit, York County, Maine
Local Cooperation Agreement Between the Department of
the Army and the Town of Ogunquit for Josias River at
Perkins Cove Navigation Improvement Project

Dear Colonel Wilson:

We are the attorneys for the Town of Ogunquit.

The Town scheduled a meeting between the Selectmen, myself and representatives of your department for December 29, 1989 to discuss the draft local Cooperation Agreement concerning the Josias River at Perkins Cove Navigation Improvement Project.

Your department was unable to send a representative so the Selectmen, members of the public, and I discussed a number of concerns about the Agreement, some raised by individual Selectmen, some by the Board as a whole and some by the public.

The Town is very interested in moving forward with this project but there are various items in the draft Cooperation Agreement that need to be explained and some that need to be resolved. Accordingly, the Selectmen have asked me to summarize their concerns and questions as well as my own concerns and questions for your department.

Originally, I understand, your department has asked the Town to respond to the draft Cooperation Agreement sometime during the

month of January. I gather your department anticipated that if agreement can be reached, that it be reached in January.

The Selectmen are prepared to go forward as best they can but until we have responses to the various issues and questions we have raised and until they are resolved, the Selectmen are in no position to take this local Cooperation Agreement to the voters who are the ones who must approve it.

I note by way of introduction that it appears that the draft Agreement is modeled after some standard form. Accordingly, there seems to be many provisions of the Agreement which simply do not apply to this project and should perhaps be eliminated.

Our comments are as follows:

1. Page 2, Article 1, Paragraph a

This paragraph refers to the larger project document. It is not clear, however, whether that project document is incorporated in this Agreement by reference. If it is to be incorporated, and perhaps it should, there should be specific language doing so.

2. Page 3, Article II, Paragraph a

This provision permits the government to award contracts after only "review and comment" by the Town. The question the Town has is what would happen if bids came in higher or they are higher than anticipated or there are contract overruns. The Town does not want to be liable for any excessive bids or contract overruns which would cause its share of the project costs to exceed its anticipated share.

3. Page 3, Article II, Paragraph b - Maintenance.

Does this clause obligate the Town to maintain the project? For example, does this clause mean that if the navigation channel and anchorage become silted in, that the Town is obligating itself to maintenance dredging? If that is so, the Town is very concerned as it does not feel it can obligate itself to maintenance dredging. A definition of maintenance is needed.

4. Page 3, Article II, Paragraph c

This paragraph also appears to require the Town to engage in maintenance dredging. The Selectmen need to know whether this is what is intended by that paragraph as the voters need to have that information before deciding whether to authorize execution of the Agreement.

5. Page 3, Article II, Paragraph d - Dredge Material Disposal Areas

It is our understanding that your department has already arranged for a dredged material disposal area. If that is so, this provision should be eliminated.

6. Page 4, Article II, Paragraphs f,g, and h

These paragraphs relate to Ogunquit's costs and refer to percentages of construction costs assigned to commercial navigation and assigned to recreation. There is some description in the larger project report of costs but the Town needs to know just what these costs will be before the matter is presented to the voters. It needs to know how much has to be paid up front and how much can be paid over time.

7. Page 4, Article II, Paragraph i

This provision requires Ogunquit to prohibit the erection of any "structures within a distance, to be determined by the government, from the bottom edge of the channel and anchorage". The Town needs to know what that distance will be.

8. Page 5, Article II, Paragraph k

This Article provides that the Town must grant first priority for moorings to commercial fishing and charter fishing vessels requiring the additional depth provided by the project. At the current time, Ogunquit is providing first priority to commercial fishing and charter fishing vessels to the extent that the depth in the area permits them in the front 2.1 acres of the harbor. The Town needs to be assured that the government would not require that the entire cove be handed over to commercial vessels.

9. Page 5, Article III, Paragraph b

This paragraph refers to "all monitoring features". If monitoring is to be required, the Town needs to know just exactly what monitoring would be proposed. If monitoring is not a part of the project, then this provision should be eliminated.

10. Generally with respect to the maintenance provisions which appear throughout the Agreement, the Town needs to know if what it is doing now is adequate to fulfill its obligations for "operation and maintenance".

11. Page 5, Article III, Paragraph d

The terms "waste weirs" and "stilling basins" are used. There was some debate over what precisely a waste weir is and no one seemed to know what a stilling basin was. We do know however, that the project does not involve waste weirs or stilling basins and we request that those terms be eliminated.

12. Page 5, Article IV, Paragraph a - Credits

The Selectmen would like to know what credits will be given the Town towards its share of the project costs. This is important so that the voters can be fully informed of the bottom line cost to the Town before they vote.

13. Pages 5, 6, 7, Article IV

At least one Selectmen and member of the participating public was concerned whether there was anything in this article requiring Ogunquit to transfer any of its lands, easements, or rights of way to the federal government. I believe there is nothing in that article which would require any such transfer but the Town does need written assurance of that.

14. Page 9, Article VIII, Paragraph a

This paragraph is rather open-ended. It provides that the Town shall provide, operate and maintain all related navigation facilities "in accordance with regulations or directions prescribed by the government". The question is, what regulations or directions are included within this phrase? We would like to know what existing regulations or directions are covered by this phrase. We would also like to know if this phrase means that the Town is agreeing ahead of time to abide by all regulations or directions which the government may prescribe in the future.

15. Page 9, Article VIII, Paragraph a

This paragraph requires the Town to provide, operate and maintain "all related navigation facilities". Article II, Paragraph c on Page 3 defines related navigation facilities to mean facilities for "realization of the benefits the project is intended to produce, including dredge depths in berthing areas, and local access channels commensurate with related depths in the project and adequate public landing facilities . . .". A more specific definition of related navigation facilities would be appropriate. The Town must know the extent of its responsibilities.

16. Page 9, Article VIII, Paragraph a

This paragraph could be construed to require maintenance dredging. As previously explained, the Town does not want to assume that burden at this point.

17. Page 9, Article VIII, Paragraph d

This paragraph is another provision which appears to require maintenance dredging. We need to know whether that is a requirement. This paragraph also refers to related navigation facilities which needs to be defined.

18. Page 10, Article VIII, Paragraph e

The next to the last sentence again appears to contemplate maintenance dredging. If maintenance dredging is not contemplated, all provisions implying that requirement should be eliminated.

19. Page 10, Article VIII, Paragraph e

The next to the last sentence refers to "the period of federal participation". We would like to have a definition of that phrase.

20. Generally, for what period of time is the Town responsible for maintenance and other compliance referred to within the grant Agreement; if a mooring policy is to be imposed, for what period of time would that mooring policy be imposed?

21. Page 14, Exhibit B

What is the genesis of this definition? Does Ogunquit's current mooring policy meet this definition? What are the statutes or regulations authorizing this definition? Would Ogunquit still be consistent with the definition if it charged non-residents a higher fee to recover the Town's share of the costs of the project and share of the costs of annual maintenance? If so, over how short a period of time can the Town impose these higher fees to recover its fair share of costs from non-resident users?

22. In a more general vein, it is our impression that the Army Corps is treating Ogunquit and this grant differently from, and more harshly than, it treats others similarly situated. Is there any particular reason for this that can be articulated?

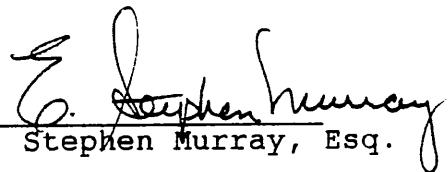
23. Why did representatives of the Department tell Town officials that if Ogunquit refused the "grant" and raised the money on its own to engage in the dredging project, that it would not be granted an Army Corps permit?

As I said at the outset, the Selectmen are desirous of going forward with this project in a timely fashion. However, as I am sure you understand, their many concerns will be reflected by questions from the voters and will have to be resolved to the voters' satisfaction. Accordingly, we would greatly appreciate your serious consideration of the questions and the issues that I have raised on behalf of the Town in this letter and your early written response.

After you have responded in writing, the Selectmen may wish to request a meeting for further clarification.

Thank you for your anticipated cooperation.

Sincerely,
MURRAY, PLUMB & MURRAY

BY: 
E. Stephen Murray, Esq.

ESM:md



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

January 10, 1990

Mr. Joseph L. Ignazio, Chief
Planning Division
US Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9149

Dear Mr. Ignazio:

This letter responds to Colonel Wilson's December 7, 1989 request for our review and comments on the draft Detailed Project Report, including an Environmental Assessment, Section 404(b)(1) Evaluation and Finding of No Significant Impact for a Section 107 Navigation Improvement project in the Josias River at Perkins Cove, Ogunquit Maine.

The recommended plan of improvement will increase the depth of 2.1 acres of the 4.2 acre anchorage area in Flat Pond from 5 feet below mean low water (MLW) to 7 feet. The project will also increase the depth of the 40-foot wide by approximately 900-foot long entrance channel from deep water at Perkins Cove to the entrance of the anchorage area from 5 feet below mean low water to 7 feet. The project includes mechanically dredging approximately 20,000 cubic yards of rock, gravel, silty sand and silt after blasting 200 cubic yards of bedrock. The dredged material will be loaded onto a dump scow and disposed of at the Cape Arundel Disposal Site (CADS).

As stated in our letter dated February 19, 1988, we have no objection to the use of the Cape Arundel Disposal Site as there are no practicable upland alternatives. Provided all mitigative measures as stated in the Environmental Assessment (EA) are implemented, we do not foresee any long term adverse environmental effects to occur from implementation of the recommended plan for this project.

Please contact Virginia Laszewski of my staff at (617) 565-4421 if you have any questions concerning these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Doug A. Thompson".

Douglas A. Thompson, Chief
Wetland Protection Section

cc: Ronald Manfredonia, Chief, WQB
Kym Keckler, WQE
Susan Van Oettingen, FWS, Concord, NH
Chris Mantzaris, NMFS, Gloucester, MA
Maine DEP, Augusta, ME
Harbormaster, Town Hall, Ogunquit, ME
Town Manager, Town Hall, Ogunquit, ME



John R. McKernan, Jr.
Governor

William J. Brennan
Commissioner

DEPARTMENT OF MARINE RESOURCES

Telephone (207) 289-2291

January 2, 1989

Colonel Daniel M. Wilson
Division Engineer
U.S. Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254

Dear Colonel Wilson:

This is in response to your letter of December 4, 1989 about the environmental assessment of the proposed navigation project in the Josias River, Perkins Cove, Ogunquit, Maine.

We have reviewed the environmental assessment and concur with the estimated impact on the marine resources community. Proper timing of the project will minimize the adverse effect on those species inhabiting the area. By confining the blasting of ledge and dredging activities to a time period of November to April, adverse effects upon principal species of the area can be minimized. Recolonization of the subtidal area within the 2.1 acre anchorage area should occur within a short period of time. We also concur with the suggested method of spoils disposal at the Arundel ocean dump site, and the use of clean blasted rock and lobster habitat enhancement in the immediate project area.

Sincerely,

A handwritten signature in dark ink, appearing to read "E. Penn Estabrook".

E. PENN ESTABROOK
Deputy Commissioner

rr

cc: Walter Foster
Brad Sterl



STATE OF MAINE

Department of Environmental Protection

MAIN OFFICE: 400 WATER STREET, PORTLAND, ME 04101
MAIL ADDRESS: DEPARTMENT OF ENVIRONMENTAL PROTECTION, 400 WATER STREET, PORTLAND, ME 04101

JOHN R. McKERNAN, JR.
DEPUTY COMMISSIONER

DEAN D. MARSHALL
DEPUTY COMMISSIONER

Joseph Ignazio, Chief, Planning Division
Department of the Army, New England Division
Corps of Engineers, 424 Trapelo Road
Waltham, Mass. 02254-9149

26 December 1989

RE: L-14322-08-A-N; Project Extension; Perkins Cove, Ogunquit, Me.

Dear Mr. Ignazio:

Please accept this in response to your 11 December 1989 letter to Commissioner Marriott. In your letter you request extension of the State's Water Quality Certification/Consistency Determination to deepen the navigation channel in Perkins Cove. Compliance with special condition #2 of that Certification is also requested.

During a review of the information, I note that the original Certification was issued on 14 September 1987 and that standard conditions of approval apply to this Certification. Please note that standard condition D of this Certification is as follows.

"D. Initiation of Activity Within Two Years. If construction or operation of the activity is not begun within two years, this consistency determination shall lapse and the applicant shall reapply to the Board for a new consistency determination. The applicant may not begin construction or operation of the activity until a new consistency determination is granted. Reapplication for consistency determinations shall state the reasons why the activity was not begun within two years from the granting of the initial consistency determination and the reasons why the applicant will be able to begin the activity within two years from the granting of a new consistency determination, if so granted. Reapplications for consistency may include information submitted in the initial application by reference."

Therefore, the original Certification/Consistency Determination has lapsed and cannot be extended. If you wish to reapply please make sure that new dredge samples are taken and dredge sample data is updated to current standards and in accordance with the 5 July 1989 Notice entitled "Dredged Material Testing Protocols" from your office, copy attached.

If you have any questions, please feel free to contact me at 289-2111.

Sincerely,

DAVID SILVER
Division of Natural Resources
Bureau of Land Quality Control

DS/DSCORPOGU

cc: Bill Laflamme, DEP; Don Witherill, DEP; Bob Blakesley, SPO; Walt Foster
DMR; Brad Sterl, DMR; Catherine Demos, Corps

APPENDIX 1

SECTION C

COPIES OF CORRESPONDENCE
RECEIVED BEFORE REVIEW
OF DRAFT DETAILED PROJECT REPORT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

February 19, 1988

Mr. Joseph L. Ignazio, Chief
Impact Analysis Branch
Planning Division
U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9149

RE: Perkins Cove Navigation Improvement Project, Ogunquit, Maine

Dear Mr. Ignazio:

This letter is in reference to the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) report your office completed for the Perkins Cove Navigation Improvement Project in Ogunquit, Maine.

We previously reviewed the dredging portion of this project (see letter dated March 17, 1987) and had no major concerns with this portion of the project. Since that time, the Corps has realized that the previously proposed disposal sites are unacceptable because of the PCB levels in the sediments.

Despite the fact that these levels are low, the sediments are considered Class II under the State of Maine's classification system and, therefore are restricted to licensed landfills for upland disposal. The nearest of these landfills, according to Don Kale of Maine Department of Environmental Protection, is located in Scarborough, Maine, which the Corps has determined to be too costly to be practicable. Therefore, the Corps has designated the Cape Arundel Disposal Site (CADS) for disposal of the dredged material. We have no objection to this disposal site as there are no practicable upland alternatives.

If you have any questions regarding this letter, please contact Pam Shields of my staff at 565-4429.

Sincerely,

for *Matt Schwab*
Douglas A. Thompson, Acting Chief
Wetland Protection Section

cc: USFWS, Concord, NH
NMFS, Gloucester, MA ATTN: Chris Mantzaris
Maine DEP, Augusta, Maine
Harbormaster, Town Hall, Ogunquit, Maine
Town Manager, Town Hall, Ogunquit, Maine



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Habitat Conservation Branch
Narragansett Laboratory
South Ferry Road
Narragansett, RI 02882

December 11, 1987 TPM

Mr. Joseph L. Ignazio
Planning Division
Department of the Army
New England Division
Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149

Dear Mr. Ignazio:

In response to your request, I enclose a list of endangered and threatened species that may occur within the Cape Arundal Disposal Site in Maine, pursuant to Section 7(c) of the Endangered Species Act (ESA). No other species or habitat have been proposed for listing under the ESA.

For further consultation and coordination regarding endangered and threatened species at this project site, please contact me at FTS 838-6258. Written requests for additional information may be sent to me at the above address.

Sincerely,

Tracey P. McKenzie

Tracey P. McKenzie

enclosure 1



LIST OF THREATENED AND ENDANGERED SPECIES - CAPE ARUNDEL
DISPOSAL SITE

Endangered

Fin Whale Balaenoptera physalus

Humpback Whale Megaptera novaeangliae

Right Whale Eublaena glacialis

Blue Whale Balaenoptera musculus

Sei Whale Balaenoptera borealis

Sperm Whale Physeter macrocephalus

Leatherback Sea Turtle Dermochelys coriacea

Atlantic Ridley Sea Turtle Lepidochelys kempi

Hawksbill Sea Turtle Ertmochelys imbricata

Shortnose Sturgeon Acipenser brevirostrum

Threatened

Loggerhead Sea Turtle Caretta caretta

Green Sea Turtle Chelonia mydas



MAINE HISTORIC PRESERVATION COMMISSION

55 Capitol Street
State House Station 65
Augusta, Maine 04333

Earle G. Shettleworth, Jr.
Director

Telephone:
207-289-2133

November 3, 1987

Mr. Joseph Ignazio
Army Corps of Engineers
424 Trapelo Road
Waltham, Mass.
02254-9149

Dear Mr. Ignazio:

My staff has reviewed the change of disposal area to the Cap Arundel Ocean Disposal Area for material dredged from Perkins Cove.

I find that this project will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Officer



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

9/14/87

U.S. ARMY CORPS OF ENGINEERS
Ogunquit, Maine
DREDGING
#L-014322-08-A-N

) Federal Consistency Review & Concurrence
) and Water Quality Certification
)
) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of Maine's Coastal Area Management Act and Section 401 of the Federal Water Pollution Control Act, the Department of Environmental Protection has considered the application of the U.S. ARMY CORPS OF ENGINEERS with its supportive data, staff summary, agency review comments, and other related materials on file and finds the following facts:

1. The Maine Coastal Zone Program was approved on September 30, 1978 by the Federal Office of Coastal Zone Management. Under Section 307 of the Coastal Zone Management Act, as amended, Federal activities which affect land or water resources in the Coastal Zone must be undertaken in a manner consistent to the maximum extent practicable, with the requirements of Maine's approved Coastal Zone Management Program.
2. The U.S. Army Corps of Engineers proposes to improve the Perkins Cove Federal Navigation Project in Ogunquit by deepening by approximately 2 feet the existing entrance channel and a portion of an existing anchorage.
3. The 129,476 square feet of subtidal cove bottom proposed to be altered contains some ledge in the upper portion of the channel, however, the remainder consists of natural bottom sediments varying from sandy gravel to sandy silt.
4. The deepening of the channel and anchorage would be accomplished by dredging with a clamshell dredge. In addition blasting will be employed to remove ledge. The 950 foot long, 40 foot wide entrance channel and the lower 2.1 acres of the existing 4.2 acre anchorage basin will be dredged from -5 feet mean low water (MLW) to -7 feet MLW. Approximately 220 cubic yards of rock and 16,800 cubic yards of sediment will be removed and after dewatering is proposed to be disposed of at either of two possible upland locations in Ogunquit. The dredging and disposal activity will occur between the months of November and April.
5. Analysis of the samples taken in the area proposed to be dredged indicate levels of contaminants such as P.C.B. and Mercury, which are high enough to consider the dredge spoils as Class II material under the Department's dredge spoil guidelines. According to these guidelines Class II material can only be disposed of at a licensed landfill site or at an approved off shore disposal area. The disposal areas proposed by the Corps are not currently licensed to take Class II material.
6. The project has been reviewed by the Department of Marine Resources (DMR). DMR indicated that the dredging would not adversely affect marine resources.

U.S. ARMY CORPS OF ENGINEERS 2 Federal Consistency Review & Concurrence
Ogunquit, Maine) and Water Quality Certification
DREDGING)
#L-014322-03-A-N) FINDINGS OF FACT AND ORDER

BASED on the above findings of fact, the Department makes the following conclusions,

- A. The project will not unreasonably interfere with existing recreational and navigational uses.
- B. The project will not cause unreasonable soil erosion.
- C. The project will not unreasonably harm wildlife or freshwater, estuarine, or marine fisheries.
- D. The project will not unreasonably interfere with the natural flow of any waters.
- E. There is reasonable assurance that the activity will not lower the quality of any waters or violate applicable Water Quality Standards provided that dredge spoils are properly disposed of at an approved disposal area.

THEREFORE, the Department concurs with the U.S. ARMY CORPS OF ENGINEERS consistency determination and GRANTS a Water Quality Certification to deepen the Perkins Cove navigational project in Ogunquit, Maine, in accordance with the following conditions:

- 1. The Standard Conditions of Approval, except Condition F, a copy attached.
- 2. Prior to dredging the Corps shall submit to the Department for review and approval of the Commissioner evidence that a licensed facility or an approved off shore disposal site shall be used for the disposal of dredge spoils.

DONE AND DATED AT AUGUSTA, MAINE, THIS 14TH DAY OF SEPTEMBER, 1987.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: Dean C. Marriott
Dean C. Marriott, Commissioner

PLEASE NOTE ATTACHED SHEET FOR APPEAL PROCEDURES....

Date of initial receipt of application 4/2/87

Date of application acceptance 4/7/87

USACE

November 1, 1979

****STANDARD CONDITIONS****

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE COASTAL WETLANDS LAW, UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

- A. **Approval of Variations From Plans.** The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.
- B. **Compliance With All Applicable Laws.** The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.
- C. **Compliance With All Permit Terms and Conditions.** The applicant shall submit all reports and information requested by the Board or the Department demonstrating that the applicant has complied or will comply with all terms and conditions of this permit. All preconstruction terms and conditions must be met before construction begins.
- D. **Initiation of Activity Within Two Years.** If construction or operation of the activity is not begun within two years, this permit shall lapse and the applicant shall reapply to the Board for a new permit. The applicant may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits shall state the reasons why the activity was not begun within two years from the granting of the initial permit and the reasons why the applicant will be able to begin the activity within two years from the granting of a new permit, if so granted. Reapplications for permits may include information submitted in the initial application by reference.
- E. **Reexamination After Five Years.** If the approved activity is not completed within five years from the date of the granting of a permit, the Board may reexamine its permit approval and impose additional terms or conditions to respond to significant changes in circumstances which may have occurred during the five-year period.
- F. **No Construction Equipment Below High Water.** No construction equipment being used in the undertaking of an approved activity is allowed below the mean high water line.
- G. **Permit Included In Contract Bids.** A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.
- H. **Permit Shown To Contractor.** Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit.



STATE OF MAINE

Department of Environmental Protection

MAIN OFFICE: RAY BUILDING, HOSPITAL STREET, AUGUSTA
MAIL ADDRESS: State House Station 17, Augusta, 04333

JOHN E. BAKERMAN, JR.
GOVERNOR

RIGHTS OF REVIEW AND APPEAL

DEAN C. MARRIOTT
COMMISSIONER

Any person aggrieved by a decision by the Board of Environmental Protection ("Board") or the Commissioner of Environmental Protection ("Commissioner") has the following rights of review and appeal:

I. For any decision by the Board:

A. Reconsideration by the Board:

Within 30 days after the applicant receives a Board decision any person aggrieved by the decision may petition the Board, in writing, to secure reconsideration of the decision. If the Board decision was made without a public hearing, the aggrieved applicant may also make a request, in writing, for a hearing. The petition shall include, but need not be limited to, the findings, conclusions or conditions objected to or believed to be in error, the basis of the objections or challenge and the remedy sought and the nature of any new or additional evidence to be offered.

The Board shall, within 30 days after receiving such a petition and after appropriate notice, grant the petition in full or in part; dismiss the petition in full or in part; or order a public hearing to be held within 45 days.

B. Judicial appeal:

Any person aggrieved by a final Board decision is entitled to judicial review by filing a petition in Superior Court for Kennebec County or in Superior Court for the county where: (1) the aggrieved person resides or has his principal place of business; or (2) the activity or property which is the subject of the proceeding is located.

The petition for review shall be filed within 30 days after receipt of notice if taken by a party to the proceeding of which review is sought. Any other person aggrieved shall have 40 days from the date the decision was rendered to petition for review.

The petition for review shall be sent by certified mail, return receipt requested, to the Department, all parties to the proceeding, and the Attorney General.

II. For a decision by the Commissioner:

A. Where the Legislature has delegated authority to the Commissioner to act on certain applications: Within 30 days after the

REGIONAL OFFICES

• Portland •

• Bangor •

• Presque Isle •

applicant receives a Commissioner decision, relative to any Legislatively-delegated license or permit, any person aggrieved by the decision may appeal to the Board for a review of the Commissioner's decision. The notice of appeal shall include, but need not be limited to, the findings, conclusions or conditions objected to or believed to be in error, the basis of the objections or challenge, the remedy sought, and the nature of any new or additional evidence to be offered. The Board's review shall be limited to the matters at issue in the written appeal.

The Board shall, within 30 days after receiving such an appeal and after appropriate notice, affirm, affirm with conditions, reverse the decision of the Commissioner, or order a public hearing to be held within 45 days.

B. Where the Board has delegated authority to the Commissioner to act on other applications: Within 30 days after the applicant receives a Commissioner decision, relative to any Board-delegated license or permit, any person aggrieved by the decision may appeal to the Board for a review of the Commissioner's decision. The notice of appeal shall include, but need not be limited to, the findings, conclusions or conditions objected to or believed to be in error, the basis of the objections or challenge, the remedy sought and the nature of any new or additional evidence to be offered. The Board's review shall be limited to the matters at issue in the written appeal.

The Board shall, within 30 days after receiving such an appeal and after appropriate notice, either affirm, affirm with conditions, or reverse the decision of the Commissioner, or order a public hearing to be held within 45 days.

The Board reserves the right to review the Commissioner's decision on any Board-delegated application at the next regularly scheduled Board meeting after such action. If the Board takes no action at such meeting, the Commissioner's decision is final, subject to the preceding two paragraphs.

PLEASE NOTE:

1. Because a person other than the applicant may file an appeal, commencing work on an approved project before the appeal or review period has expired entails a risk that the approval may be altered. Applicants should assess the likelihood and extent of such a risk before commencing work.
2. The filing of a petition for review or appeal does not operate as a stay of the final agency action.
3. Further information concerning review and appeal may be found in the Maine Administrative Procedure Act (5 M.R.S.A. Section 8001 et seq.) and Department of Environmental Protection statutes (38 M.R.S.A. Section 341 et seq.) and regulations.
4. You may contact the Department's Division of Public Assistance, 289-2343 if you have any question about the review and appeal procedures.



STATE OF MAINE

Department of Environmental Protection

MAIN OFFICE: RAY BUILDING, HOSPITAL STREET, AUGUSTA
MAIL ADDRESS: State House Station 17, Augusta, 04333

JOHN R. McKERNAN, JR.
GOVERNOR

July 8, 1987

DEAN C. MARRIOTT
COMMISSIONER

Cathrine Demos
Planning Division
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254-9149

RE: Dredging, Perkins Cove, Ogunquit

Dear Cathy:

This letter is to confirm our recent telephone conversation concerning the above referenced matter. As I've indicated, in comparing the Bulk Sediment analysis results, submitted with the Consistency determination application, with the Department's Dredge Spoils disposal guidelines, it appears that the 17,020 cubic yards of dredge spoil material to be disposed of is considered to be Class II material. As you know Class II material can only safely be disposed of or used as cover material, at a licensed landfill or disposed of through ocean dumping at an approved site.

According to the Land Bureau's enforcement division the two disposal areas which you propose to use are not currently licensed to accept Class II material. I would therefore recommend that alternative areas of disposal be investigated. A good person to talk with on other potential upland disposal sites in the Ogunquit area would be Donald Kale of the Land Bureau's South Portland office. Don can be reached at (207) 767-4763. I would caution you however, that I know of no approved landfill sites in that area which have been specifically licensed to take dredge spoil material. Formal Department approval would be necessary before any landfill site could be used. Due to the time factor involved, ocean disposal may be a better option to investigate.

Regarding the processing time for the Federal Consistency Determination application I would like to formally request a 30 day extension from this date in order to allow for this disposal site matter to be resolved.

I would appreciate it if you could get back to me concerning this matter as well as whether an extension would be granted, as soon as possible.

As always if you have any questions or would like to discuss this further, feel free to contact me at 289-2111

Sincerely,

WILLIAM N. LAFLAMME
Division of Licensing & Review
Bureau of Land Quality Control

WNL/lck

"PORTLAND"

REGIONAL OFFICES
• Bangor •

• Presque Isle •



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J. F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

April 13, 1987

Mr. Joseph L. Ignazio, Chief
Impact Analysis Branch
Planning Division
U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9190

RE: Perkins Cove Navigation Improvement Project, Ogunquit, ME

Dear Mr. Ignazio:

It is the Environmental Protection Agency's (EPA) understanding that the town of Ogunquit and the Army Corps of Engineers have agreed to implement EPA's March 17, 1987 recommendations on the Perkins Cove Improvement Project.

In light of the fact that only half of the anchorage site will be dredged and the test area of highest PCB concentration (site "F", Table 4) will not be disturbed, EPA does not object to this project.

However, EPA requests that care will be taken in dredging the area around test site "C", an area which showed significant levels of PCB contamination. EPA further recommends that dredged material from this area will be placed in an isolated and secure section of the town landfill and will be capped with "clean" dredged material.

Prior to any changes in scope or character of this project EPA requests notification.

If you have any questions please contact Matthew Amorello of my staff at FTS 835-3540.

Sincerely,

A handwritten signature in dark ink, appearing to read "Doug Thompson", is written over the word "Sincerely,".

Douglas Thompson, Acting Chief
Wetlands Unit

cc: USFWS, Concord, NH
NMFS, Habitat Conservation Office, Gloucester, MA
MEDEP, Augusta, ME
Harbormaster, Town Hall, Ogunquit, ME
Town Manager, Town Hall, Ogunquit, ME



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J. F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

March 17, 1987

Mr. Joseph L. Ignazio, Chief
Impact Analysis Branch
Planning Division
U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9149

RE: Perkins Cove Navigation Improvement Project, Ogunquit, Maine

Dear Mr. Ignazio:

This letter is in reference to the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) report your office completed for the Perkins Cove Navigation Improvement Project located at Ogunquit, Maine.

Pursuant to Sections 176(c) and 309 of the Clean Air Act, as amended (42 U.S.C. 7401 et. seq.), the Environmental Protection Agency (EPA) is providing comment on the above-mentioned project.

The EA/FONSI report prepared by Ernest Waterman and Catherine Demos of your staff indicated that there are levels of PCBs that are of concern to this Agency (Table 4: Bulk Sediment Analysis for 1983).

EPA recommends that the following precautions be taken as a result of these levels of PCB:

- a. The staging area for the dewatering and stockpiling of the dredged material should be prepared appropriately. If the stockpile area is gravel, soil or other permeable material, a mat made of an impermeable material should be placed on the ground before material is placed to prevent PCB contamination of the underlying and surrounding area soil.
- b. If the site for stockpiling is made of asphalt or concrete the Corps should make assurances that the area will be free of PCBs after the project is completed. This can be done by thoroughly washing the site area.
- c. Runoff from the dewatering and site clean up should be channeled back into the Perkins Cove Channel and should not be allowed to seep into the surrounding environment.
- d. The Corps should also make assurances that PCB contaminated material from the marine environment does not remobilize and enter the terrestrial environment.

- e. A criterion for the selection of a suitable upland dumpsite should be an area that has no possibility of allowing the PCBs to enter the groundwater. The landfill or quarry might meet this criteria.
- f. The site used for dumping the dredged material should be capped with a material that will prevent the PCBs from remobilizing into the environment.
- g. The dredged material should not be used for any purpose such as construction fill, capping material, etc.

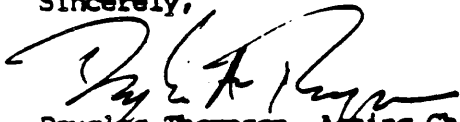
The National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service indicated that there are no threatened or endangered species located in the project area. EPA concurs with NMFS time-of-year restriction to avoid interfering with shellfish breeding.

The EA/FONSI report also states that the harbor and channel have been previously dredged and that there are no areas of special environmental concerns, e.g., eelgrass community, or significant impact to the marine environment.

There is no significant impact to freshwater wetlands in this project. According to the report none of the dredged material will be placed in a wetland and all currently considered disposal sites are upland.

If the dumpsite location should change or any aspect of this project is expanded, modified, and/or changed, EPA would like the opportunity to review and comment. If you have any questions or comments on this letter please contact Matthew J. Amorel of my staff at FTS 835-3540. Thank you for this opportunity to comment.

Sincerely,


Douglas Thompson, Acting Chief
Wetlands Unit

cc: USFWS, Concord, NH
NMFS, Habitat Conservation Office, Gloucester, MA
Maine Department of Environmental Protection, Augusta, ME
Harbormaster, Town Hall, Ogunquit, ME
Town Manager, Town Hall, Ogunquit, ME



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

February 13, 1987

REPLY TO
ATTENTION OF

Planning Division
Impact Analysis Branch

Mr. Henry E. Warren, Commissioner
Maine Department of Environmental Protection
Bureau of Land Quality Control
State House, Station #17
Augusta, Maine 04333

Dear Mr. Warren:

Enclosed is an application for Water Quality Certification and for your concurrence with our consistency determination pursuant to 38 MRSA Section 474 of Maine's Coastal Area Plan. Please review this application for the Perkins Cove Project - Section 107 - Navigation Improvement Study located in Ogunquit, Maine.

The proposed navigation improvement project involves deepening the lower (2.1 portion) acres of the existing anchorage basin and the entrance channel to 7 feet MLW without any alteration of the present authorized project limits. Dredging the anchorage basin and the entrance channel will remove 220 cubic yards of rock and 16,800 cubic yards of sediment.

The dredged material will be removed by a bucket dredge and transferred to the bulkhead in front of the boatyard for temporary stockpiling and dewatering. After dewatering, the material will be trucked to a permanent upland disposal site. The proposed disposal sites include an old quarry seeking fill material and a privately owned and operated land fill.

Should you have any questions during your review, please do not hesitate to call Ms. Cathy Demos, of my staff, at (617) 647-8231 or FTS 839-7231. Your timely response will be greatly appreciated.

Sincerely,

Joseph L. Ignazio
Chief, Planning Division

Enclosure

OGUNQUIT

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MUNICIPAL OFFICES
SCHOOL STREET
OGUNQUIT, MAINE 03907
207-848-5139

October 6, 1986

Colonel Thomas A. Rhen
Army Corps of Engineers
Division Engineer
New England Division
424 Trapelo Road
Waltham, Massachusetts 02254-9149

Dear Colonel Rhen:

Thank you for your letter of October 2, 1986, in which you accurately described the issue that has been under discussion between the Town of Ogunquit and the Corps and the position of the Corps vis-a-vis that issue.

As you probably know, I did review, very carefully, the documents provided to me by your staff and I did not find any specific reference to mooring plans or mooring policy anywhere in those documents. However, I believe the Board of Selectmen understands that the Corps of Engineers could impose conditions such as those that have been under discussion prospectively i.e., with regard to any future dredging project at Perkins Cove.

I am providing a copy of your letter and my response to the Board of Selectmen for its information. If the Board wishes to initiate further discussion with you, I will be in touch.

Sincerely,



James K. McMahon
Town Manager

JKM/jas

cc: Board of Selectmen

OCT 15 1986



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

RECEIVED OCT - 6 1986

October 2, 1986

NEDOD-R
Regulatory Branch

Mr. James McMahon
Town Manager
Municipal Offices
School Street
Ogunquit, ME 03907

Dear Mr. McMahon:

This is in response to questions concerning the use and administration of Perkins Cove which you have raised in several letters.

New England Division is sensitive to your community's need to maintain order and to provide appropriate ordinances for the administration of Perkins Cove. However, those ordinances must conform with Congressional, Corps of Engineers, and State policies which protect the rights of the general public. You might be aware that there is interest on the part of some state officials in revising the Maine Harbormaster statutes which should clarify certain questions of public access to the harbors of Maine. A State policy which is consistent with Federal policy would go a long way to resolving the kinds of conflicts which have been discussed with you.

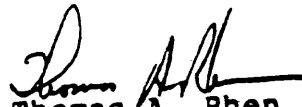
The Federal policies which were previously cited are derived from many separate Congressional enactments which have authorized the Corps of Engineers to regulate and improve navigable waters of the United States. While the public laws governing water resources are the basic source of formal, explicit policy, the Congressional intent found in the documented history of these legislative statements is also an important policy source. Sources which express the intent of Congress include House and Senate Committee reports and resolutions, and the Congressional Record of discussions during consideration of the proposed legislation.

The consistent intent of these policies has been that improvements which are made with public funds must be in the general public interest and must be available to the public on equal terms. Practically, this is translated into local policy by the execution of agreements by participating agencies and the Corps of Engineers. The argument over whether the terms of local cooperation are explicit on the question of public access is of little meaning since the agreement can not be construed to be inconsistent with public policy.

Thus reaction to enforcement of any local ordinance which denies the public equal access must be to try to secure those rights. In this same regard, any work currently under way or planned by the Corps will be subject to the same policies. If the community is unwilling to accept the terms as outlined, ongoing activities will have to be reevaluated in that light.

If you or the Selectmen believe that it would be useful to discuss these or any other questions relating to the Corps of Engineers' activities, I will be pleased to schedule a meeting at your convenience. Please feel free to contact me at 617-647-8220.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Thomas A. Rhen', with a stylized flourish at the end.

Thomas A. Rhen
Colonel, Corps of Engineers
Division Engineer

OGUNQUIT

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MUNICIPAL OFFICES
SCHOOL STREET
OGUNQUIT, MAINE 03907
207-846-5139

August 1, 1986

Terry Vetter, Legal Intern
Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254

Dear Mr. Vetter:

This responds to your letter of July 23, 1986, and to the additional information you have provided for me. I appreciate, very much, the additional information and I have combined it with the information you sent previously.

A review of all of the documents still has not convinced me that the Corps of Engineers has authority over Ogunquit's Mooring Plan.

Congressional Document #227 does require in Section 41 that the Town make available "a free public landing for pleasure craft". That same document in Section 10 defines terminal and transfer facilities as being "wharves". I fail to see where Congressional Document #227 precludes the Town from having its own Mooring Plan.

The Rivers and Harbor Act of 1945 contains in Section 1 a strong statement that it was the policy of Congress "to recognize the interests and rights of the states in determining the development of the watersheds within their boundaries and, likewise, their interests and rights in water utilization and control..." The Town's Municipal Harbor Ordinance which contains its Mooring Plan is in conformance with current State law.

Congressional Document #377 talks about many things but its only reference to moorings is found on Page 10. Section 15, on Page 10, makes the statement that "all terminal facilities and moorings are open to all on an equal basis" and probably that was the case in 1958. Section 13, on Page 10, again defines terminal facilities as "wharves" and recognizes the fact that all are open to the public free of charge. In Section 77, the two (2) conditions stated do not speak to either terminal facilities or moorings.

Finally, in the Rivers and Harbor Act of 1958, there is language that makes the provisions of Section 1 of the Rivers and Harbor Act of 1945 applicable to the projects authorized. As previously stated, that Section restates the policy of Congress.

Terry Vetter, Legal Intern
Army Corps of Engineers
July 31, 1986
Page 2

It is very possible that I have missed something in these documents and, if so, I welcome you calling what I have missed to my attention. I have reviewed the complete set of documents very carefully and I still cannot see that the Town has made a commitment to provide a specific k of Mooring Plan or that the Corps of Engineers has the authority to require it to do so.

I will continue to search our records to see if any additional information is available.

Sincerely,



James K. McMahon
Town Manager

JKM/jas

cc: Board of Selectmen
E. Stephen Murray, Esq.
James Katsiaficas, MMA



REPLY TO
ATTENTION OF

RECEIVED JUL 25 1986

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

NEDDD-R

July 23, 1986

James McMahon
Town Manager
School Street
Ogunquit, Maine

Dear Mr. McMahon:

This letter is in regard to your recent request for more information concerning Federal involvement in Perkins Cove.

Please find enclosed the following documents which outline Congressional action concerning Perkins Cove:

- 1) The Rivers and Harbors Appropriations Act of 1935 which authorized funding for a preliminary examination of the proposed improvements in Perkins Cove.
- 2) The Rivers and Harbors Appropriations Act of 1945, which authorized the improvements in Perkins Cove as outlined in House Document Numbered 227, 76th Congress.
- 3) House Document Numbered 377, 85th Congress, which is a proposal to extend the Flat Pond anchorage.
- 4) The Rivers and Harbors Appropriations Act of 1958, which authorized the improvements in Flat Pond as outlined in House Document Numbered 377, 85th Congress.

I believe the Flat Pond anchorage documents provide the best information in determining Corps and Congressional concerns where Federal monies are spent. There are at least three subjects addressed in that proposal that we have discussed in the past: public access; local and general benefits; and local comment on Corps and Congressional recommendations.

The Flat Pond project does not specifically condition approval of the improvements on the local interests providing "suitable landing facilities open to all on equal terms". However, at the time of this proposed project, Ogunquit had public facilities open to all on equal terms. House Document numbered 377 contains three paragraphs describing the terminal facilities at Perkins Cove: paragraphs 13-15 (page 10) entitled "Terminal facilities". The 1st sentence in paragraph 15 states: "All terminal facilities and moorings are open to all on an equal basis." Therefore, there was no need to condition the approval of the Flat Pond project on the local interests providing equal access to public facilities.

The Flat Pond document states: "Local interests should bear a portion of the cost of the improvement commensurate with the local benefits to be derived from the improvement." (paragraph 52, page 19.) Paragraphs 38-50 (pages 15-19) of the same document discusses the estimates of the benefits to be derived between local interests and the interests of the general public. The conclusion is that Ogunquit will derive 25% of the benefits gained by enlarging the anchorage area of Flat Pond. Based on that figure Ogunquit agreed to provide 25% of the original cost of the project. (See paragraphs 52-56, page 19) Because of the important general benefits obtained in the improvements at Perkins Cove, and because the Federal Government has spent Federal funds to provide for those benefits, it is important that the facilities in Perkins Cove be kept open to all on equal terms.

This document might also assist you in your search for local documents concerning Perkins Cove. I recommend that you look for documents under the heading "Josias River". All of the Federal documents pertaining to this project were listed under "Josias River, Ogunquit, Maine".

Also, the Rivers and Harbors Act of 1945 states that it is the policy of Congress to recognize the interests and rights of the States in determining the appropriate use of waters that are part of a Federal project. Edmund Muskie, Governor of Maine at the time of the Flat Pond project stated that he explored "local opinion through appropriate State agencies". Perhaps some of the State agencies involved could help you locate records that contain local opinions.

Within House Document 377 there are clues to local responses to Corps recommendations. Paragraph 6 (page 6) of the "Report of the Board of Engineers for Rivers and Harbors" states that local interests were given an opportunity to respond to the recommendations but chose not to do so. There are also public hearings mentioned in the "Report of the Division Engineer". Paragraph 4 (page 7) mentions a public hearing held August 28, 1950 and paragraph 56 (page 19) mentions a public hearing held December 17, 1956.

I hope you find this information helpful in understanding the Federal interests in Perkins Cove. If you have any further questions or concerns you may contact me by writing to the Corps, or by telephone at 617-647-8091 or toll free 800-343-4789.

Sincerely,

Terry Vetter

Terry Vetter

Legal Intern, Enforcement Section
Regulatory Branch

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SCHOOL STREET
OGUNQUIT, MAINE 03907
207-646-5139

May 19, 1986

Terry Vetter
Army Corps of Engineers
424 Trapello Road
Waltham, MA 02254

Dear Mr. Vetter:

Thank you for calling me to advise me that the Army Corps of Engineers has now adopted a policy regarding priority lists in local harbor ordinances.

I have attached for your information a current copy of the Town of Ogunquit Harbor Ordinance. I hope you will advise me in writing as to any defects in the Ordinance, the reason for the defects, the legal authority of the Corps with regard to the defects, the effect of the defects, and suggested solutions to correct the defects.

When I receive your letter I will discuss the matter with the Board of Selectmen and it is quite likely the Board will request a meeting with you at that time.

Sincerely,



James K. McMahon
Town Manager

cc: Collis Adams

MAY 21 1986

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SCHOOL STREET
OGUNQUIT, MAINE 03907
207-646-5139

February 19, 1985

Collis G. Adams
Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254

Dear Collis:

This letter is a follow-up to our recent telephone discussion regarding Ogunquit's Municipal Ordinance which contains a priority list for mooring assignments.

As you know, the Ogunquit Board of Selectmen has equalized mooring fees between residents and non-residents effective this year. However, as you know, Section 503.5 of Title VIII of the Ogunquit Municipal Ordinance (copy attached) specifies a mooring assignment priority list.

After talking with you and Carter Laing and the Maine Municipal Association in Augusta, I have come to the conclusion that the question of municipal ordinance wording in this area is still unsettled.

Since approximately twenty-five percent of our moorings are now assigned to non-residents I would like to know from the Corps if it would be acceptable to simply amend our existing ordinance to require that notwithstanding the priority list twenty-five percent of our moorings will always be available to non-residents.

Please advise me in writing on this matter as I wish to bring it before the Board for consideration but cannot do so until this question is settled.

Sincerely,



James K. McMahon
Town Manager

cc: Maine Municipal Association

and Westerly Shorelines of said Inner Harbor. All Moorings set or placed in said Harbor shall be set or placed by the Municipal Officers, and Harbor Master shall assign a Mooring for the use of each boat, with instructions to the person in charge concerning the manner of Mooring thereon, and shall require that all fastenings be of a material, kind and character, safe and suitable for the purpose.

503 Mooring Policy

503.1 At the direction of the Harbor Master, all vessels with pulpits or lengthy bowsprits will be moored along the southerly perimeter of Perkins Cove.

503.2 The maximum lease will be one (1) mooring - one (1) boat at any time and any rafting to an existing mooring is prohibited. Mooring lessees shall not replace their acceptable vessel with another (replacement vessel) without prior notification to and written approval from the Harbor Master.

503.3 Each mooring holder is allowed one (1) dinghy which shall not be motorized and shall be visibly identified with its owner.

503.4 Existing mooring lessees shall be given year-to-year mooring leasing retention priority.

503.4.1 In the case of a sale or otherwise disposal of a vessel, an existing mooring lessee has a one (1) year grace period to replace that vessel with one of equal or shorter length; replacement vessel must conform to the definition of an acceptable vessel contained herein concurrent with Section 401.

503.4.2 In the event of a mooring leasing vacancy due to the death or retirement of a mooring lessee, a blood relative owning the same moored vessel may have first priority to lease the vacant mooring subject to the one-year grace period limitation.

503.5 As moorings become available they will be assigned according to the following priorities:

- 503.5.1 Resident commercial,
- 503.5.2 Resident non-commercial,
- 503.5.3 Non-resident property taxpayer commercial,
- 503.5.4 Non-resident property taxpayer non-commercial,
- 503.5.5 Other non-resident non-taxpayer.

503.6 Fees for mooring leasing shall be based on linear feet (fractions thereof to be rounded up to the next foot); the charge per linear foot is four dollars (\$4) for residents and/or property taxpayers with a minimum mooring fee of one hundred dollars (\$100) and six dollars (\$6) per linear foot for non-residents and non-property taxpayers with a minimum mooring fee of one hundred and fifty dollars (\$150).

503.6.1 Mooring bills shall be mailed in early January each year.

503.6.2 A twenty-five dollar (\$25) non-refundable deposit is required by April 30 of such year to insure a mooring lease; the balance may be paid by May 31 of that year.



MAINE HISTORIC PRESERVATION COMMISSION

55 Capitol Street
State House Station 65
Augusta, Maine 04333

Earle G. Shettleworth, Jr.
Director

Teleph
207-284

February 6, 1985

Mr. Joseph L. Ignazio
Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254

re: Dredging, Perkins Cove, Ogunquit, Maine

Dear Mr. Ignazio:

In response to your recent letter, I have reviewed the above noted project.

I find that this project will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

If I can be of further assistance concerning this matter, please do not hesitate to let me know.

Sincerely,


Earle G. Shettleworth, Jr.
State Historic Preservation Officer

OGUNQUIT

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MUNICIPAL OFFICES
SCHOOL STREET
OGUNQUIT, MAINE 03907
207-646-5139

February 5, 1985

Collis G. Adams
424 Trapelo Road
Waltham, MA 02254

Dear Collis:

Listed below are the owners of record of the properties fronting the Cove. These names and addresses have been taken from the Ogunquit Tax Records for 1984.

George J. Mathews, 15 Hickory Hill, Manchester, MA 01944
Eleanor Todd, Box 575, Ogunquit, Maine 03907
Peter Camplin, Autumn Brook, Cape Neddick, ME 03902
Whistling Oyster, Box 856, Ogunquit, ME 03907
William & Bernice Tower, Box 837, Ogunquit, ME 03907

Gustave Bochert, Box 811, Ogunquit, ME 03907
Norman Brazer Jr., Box 542, Ogunquit, ME 03907
John Laurent, RFD #1, Box 215, York, ME 03909
John Jacobs, Lighthouse Drive, N. Palm Beach, FL 33408
John & Cortez Maxwell and Laura & Peter Fernald, Box 1264, Ogunquit, ME 03907

Leon & Lillian Perkins, RFD, Ogunquit, ME 03907
Wayne Perkins, Shore Road, Cape Neddick, ME 03902
Town of Ogunquit, Municipal Office, School Street, Ogunquit, ME 03907
William & Mary Parenteau, 65 Baymor Drive, E. Longmeadow, MA 01028
Julia & Harry Larsen, C/O R. Loranger, 35 Market Street, Lowell, MA 01852

Perry Eimon, 509 Dongary Road, S. Easton, MA 02375
Thomas Hutchins, Box 795, Ogunquit, ME 03907
Stephen & Jenine Roberts, Box 2301, Ogunquit, ME 03907
Raymond & Joyce LeBlanc, Box 2301, Ogunquit, ME 03907
Riverside Motel & Hotel, Box 2244, Ogunquit, ME 03907

Katherine Woodman, Box 2262, Ogunquit, ME 03907
Evan Smith (deceased) Box 851, Ogunquit, ME 03907
George & Joan Curtis, 15 Summer Street, Milton, MA 02186
Denise Thorne, Bow Lake, Strafford, N.H. 03884
Osvaldo Coolidge, Box 251, Ogunquit, ME 03907

I hope these names and addresses are sufficient for your needs. One or two of the parcels are in doubtful ownership and I will have to ask the assessor for additional information.

Sincerely,



James K. McMahon

OGUNQUIT

Beautiful Place by the Sea

MUNICIPAL OFFICES
SCHOOL STREET
OGUNQUIT, MAINE 03907
207-646-5139

December 20, 1984

Collis G. Adams
Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254

Dear Collis:

Please be advised that the Board of Selectmen did vote to establish a new mooring fee schedule of \$10/foot with a twenty-five foot minimum for both residents and non-residents effective January 1, 1985.

Sincerely,



James K. McMahon
Town Manager

OGUNQUIT

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MUNICIPAL OFFICES
SCHOOL STREET
OGUNQUIT, MAINE 03907
207-848-5139

December 7, 1984

Collis G. Adams
Corps of Engineers
424 Trapelo Road
Waltham, MA 02254

Dear Collis:

A search of the Sewer District correspondence produced only the attached letter regarding the proposed spoil site property owned by Leonard Wyman. Mr. Wyman may have been in error about sludge disposal approval having been given or perhaps the correspondence file was incomplete. In any event, perhaps the attached letter can give you a starting point to check further. Please let me know if you require any other information about either of the two proposed spoil sites.

On another subject, I am requesting the Board of Selectmen to equalize the mooring fees for residents and non-residents effective January 1, 1985.

Sincerely,



James K. McMahon
Town Manager



United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
P.O. BOX 1518
CONCORD, NEW HAMPSHIRE 03301

Colonel Carl B. Sciple
Division Engineer
U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, Massachusetts 02254

OCT 4 1984

Dear Colonel Sciple:

This Planning Aid Letter is intended to aid your study planning efforts for the development of navigation improvements for Josias River at Perkins Cove, Ogunquit, Maine. It has been prepared under authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The existing Federal project consists of a 4.2 acre anchorage basin in the Flat Pond area of Josias River with an access channel 40 feet wide and 950 feet long leading to deep water in Perkins Cove; both at a depth of -5 mlw. We understand that the proposed plan of improvement consists of deepening the access channel and the lower 2.1 acres of the anchorage basin from -5 feet mlw to -7 feet mlw without any alteration of the authorized project limits. Approximately 10,600 c.y. of sandy material and 950 c.y. of rock would need to be removed. This material would be placed on shore behind existing bulkheads, dewatered, and trucked to an upland disposal site. Disposal sites under consideration include the landfill area operated by the municipal sewer district and an old quarry located off of Captain Thomas Road.

The major shellfish and finfish species of the Perkins Cove area includes lobsters, green crabs, blue mussels, American eel and pollock. The largest concentration of these species are found in the deeper water and along the ledge pinnacles of Perkins Cove. While these species do utilize the immediate area of the anchorage basin and access channel they are not considered to be a significant commercial resource within this area.

The proposed dredging of the anchorage area and access channel would have minor adverse impacts upon resources of the area, primarily attributed to blasting of ledge, suspension and siltation of dredged material and the physical removal and/or destruction of benthic organisms. These adverse impacts could be significantly reduced by limiting project construction to the period of least biological activity, late fall to early spring.

We do not object to the placement of dredged material at either of the upland sites currently under consideration. However, we believe that the 950 c.y. of rock should be utilized in a more environmentally effective manner such as to create or improve lobster habitat in the project vicinity. This Service and the Maine Department of Marine Resources would be pleased to assist you in the selection of an appropriate site for disposal of rock to create or improve lobster habitat.

We are available to provide assistance during the remaining stages of project planning, and will report on the potential impacts of your selected plan.

Sincerely yours,

A handwritten signature in cursive script, reading "Gordon E. Beckett".

Gordon E. Beckett
Supervisor
New England Field Office



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Services Division
Habitat Protection Branch
14 Elm Street
Gloucester, MA 01930

June 11, 1984

Mr. Joseph L. Ignazio
Chief, Planning Division
Department of the Army
Corps of Engineers
424 Trapelo Road
Waltham, MA 02254

Dear Mr. Ignazio:

This is in response to your May 14, 1984, request for a list of endangered or threatened species present in the areas of Smith Cove, Gloucester; Perkins Cove, Ogunquit; Pine Point Harbor, Scarborough, Maine; and Seagull and Seaview Parker River Beaches, Yarmouth, Massachusetts pursuant to Section 7(c) of the Endangered Species Act of 1973, as amended. We have identified the presence of no endangered or threatened species within the project areas which comes under the jurisdiction of the National Marine Fisheries Service (NMFS). However, disposal of material outside of the project areas may affect endangered or threatened species for which the NMFS is responsible. Therefore, when more information is available on the areas that will be used for disposal material or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

Sincerely,

Douglas W. Beach
Wildlife Biologist





United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
P.O. BOX 1318
CONCORD, NEW HAMPSHIRE 03301

Mr. Joseph L. Ignazio
New England Division
U. S. Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254

MAY 30 1984

Dear Mr. Ignazio:

This responds to your May 7, 1984, request for information on the presence of Federally listed and proposed endangered or threatened species within the impact areas of proposed navigation improvement projects in Gloucester, Massachusetts, Ogunquit, Maine, and Scarborough, Maine, and beach erosion control projects in Yarmouth, Massachusetts.

Our review shows that except for occasional transient individuals, no Federally listed or proposed species under our jurisdiction are known to exist in the project impact area. Therefore, no Biological Assessment or further consultation is required with us under Section 7 of the Endangered Species Act. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to endangered species under our jurisdiction. It does not address other legislation or our concerns under the Fish and Wildlife Coordination Act.

Lists of Federally designated endangered and threatened species in Maine and Massachusetts are enclosed for your information. Thank you for your cooperation and please contact us if we can be of further assistance.

Sincerely yours,

Gordon E. Beckett

Gordon E. Beckett
Supervisor
New England Field Office

Enclosure



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254

REPLY TO
ATTENTION OF

May 7, 1984

Planning Division
Impact Analysis Branch

Mr. Gordon Beckett
U.S. Fish & Wildlife Service
Ecological Services
P.O. Box 1518
Concord, New Hampshire 03301

Dear Mr. Beckett:

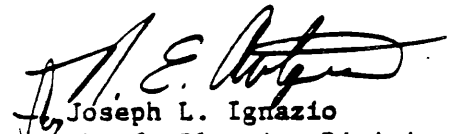
This letter concerns three of our navigation improvement studies at Smith Cove, Gloucester; Perkins Cove, Ogunquit; and Pine Point Harbor, Scarborough, Maine; and two beach erosion control studies located at Seagull and Seaview - Parkers River beaches, Yarmouth, Massachusetts on Cape Cod.

Coordination on these project studies was initiated February 28, 1984 (letter from Col. Sciple to Howard Larsen, Regional Director) and a brief description of the projects is given in the Fish & Wildlife Service Transfer Funding Sheets.

In an effort to assist us in our development and preparation of an environmental assessment and 404 evaluations, I would appreciate any information you can provide on the presence of threatened or endangered species in the project impact areas.

If you have any questions, please contact Mr. Gib Chase of my staff at FTS 8-839-7236.

Sincerely,


Joseph L. Ignazio
Chief, Planning Division

REC-10

FISH

MAY 10 1984

ECU
10

DAEN-CWP-E (23 Mar 84) 1st Ind
SUBJECT: Perkins Cove, Ogunquit, Maine

10 APR 1984

HQ, U.S. Army Corps of Engineers, Washington, D.C. 20314

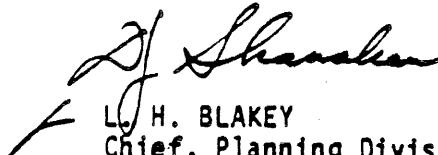
TO: Commander, New England Division, ATTN: NEDPL-C

1. We approve initiation of the DPS with funds remaining for the reconnaissance investigation. We understand that the remaining funds, in addition to excess funds transferred from the Basin Cove study, are sufficient to conduct the DPS for this fiscal year.

2. The attached marked-up fact sheet should be reviewed, appropriate revisions made, and resubmitted.

FOR THE COMMANDER:

1 Incl
wd all incl
Added incl
as


L. H. BLAKEY
Chief, Planning Division
Directorate of Civil Works



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254

REPLY TO
ATTENTION OF

MAR 23 1984

NEDPL-C

SUBJECT: Perkins Cove, Ogunquit, Maine

CDR USACE (DAEN-CWP-E)
WASH DC 20314

1. Inclosed are four copies of the fact sheet concerning the potential for a small navigation improvement at Perkins Cove, Ogunquit, Maine. The reconnaissance investigation was completed under the authority of Section 107 of the 1960 River and Harbor Act, as amended.
2. In accordance with ER 1105-2-10 and EC 1105-2-122, the fact sheets being transmitted define the problems and opportunities of the study area and identify a potential solution. Based on an appraisal of costs, benefits, and environmental impacts of the evaluated solution, continued Federal interest is justified; and we recommend proceeding into a DPS. The town of Ogunquit has sent a letter of support (inclosed) for continuing into the Detailed Project Study. However, any local financial commitment toward project cost sharing would be subject to town council approval.
3. An estimate of costs to carry out the DPS is provided on the inclosed Continuing Authority Study Cost Estimate form.
4. I therefore request approval to reallocate the remaining funds to initiate a Detailed Project Study.

Incls
As stated

CARL B. SCIPLE
Colonel, Corps of Engineers
Commanding

13 SEP 1982

DAEN-CWP-E (12 Jul 82) 1st Ind

SUBJECT: Josias River at Perkins Cove, Ogunquit, Maine, Reconnaissance Report


HQ, U.S. Army Corps of Engineers, Washington, D.C. 20314

TO: Commander, US Army Corps of Engineers Division, New England, ATTN: NEDPL-C

We approve the subject report as the basis for preparation of a detailed project report. Your request for reimbursement funds for preparation of the reconnaissance report is being handled by separate correspondence. Please advise this office when you are ready to initiate the DPR.

FOR THE COMMANDER:

wd all incl


L. H. BLAKEY
Chief, Planning Division
Directorate of Civil Works



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254

REPLY TO
ATTENTION OF:
NEDPL-C


JUL 12 1982

SUBJECT: Josias River at Perkins Cove, Ogunquit, Maine, Reconnaissance Report

CDR USACE (DAEN-CWP-E)
WASH, DC 20314

1. Inclosed are two copies of subject reconnaissance report concerning small navigation improvements completed under the authority of Section 107 of the 1960 River and Harbor Act, as amended. The report indicates that a plan of improvement appears justifiable.
2. It is requested that 96x3122, Construction General, Code 902-216 funds in the amount of \$7,500 be provided at this time to reimburse the revolving account for expenditures to date. A project cost schedule showing current capability has been inclosed.

2 Incl
as


C. E. EDGAR, III
Colonel, Corps of Engineers
Commanding

OGUNQUIT

Beautiful Place by the Sea

MUNICIPAL OFFICES
SCHOOL STREET
OGUNQUIT, MAINE 03907
207-646-8902 5/39

April 21, 1982

C.E. Edgar, III
Colonel, Corps of Engineers
Division Engineer
Department of the Army
424 Trapelo Road
Waltham, Mass. 02254

Re: Josias River/Perkins Cove
Navigation Improvements

Dear Sir:

This letter is to formally reply to your letter dated March 8, 1982 concerning the captioned matter.

The Board of Selectmen of the Town of Ogunquit reviewed your correspondence at their meeting of March 23, 1982 and authorized me to respond accordingly. We hereby agree to all the eight items of local cooperation as stipulated in the aforementioned correspondence.

Please advise us of any action on our part that could be taken to expedite this project.

RB/ms

Very truly yours,

Roberta Brown
Mrs. Roberta Brown

Town Manager

→ *Bill Frazier*

James McMahon



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254

REPLY TO
ATTENTION OF

NEDPL-C

MAR 08 1982

Mrs. Roberta Brown
Town Manager
Municipal Offices
School Street
Ogunquit, ME 03907

Dear Mrs. Brown:

Reference is made to your 6 May 1981 request for this office to undertake a navigation study for the Josias River and Perkins Cove under the authority of Section 107 of the 1960 River and Harbor Act, as amended.

In response to your request, a reconnaissance investigation was undertaken to assess the feasibility and justification for Federal involvement. In assessing all of the existing data, it has been determined that the proposed navigation improvements for commercial fishing and recreational vessels appear economically feasible, and further detailed study is therefore warranted. I would like to emphasize, however, that this determination is only preliminary in nature and no final decisions have been made as to the overall feasibility of the proposed action. Such a determination cannot be made until completion of the second and final stage of study, known as a Detailed Project Report.

Preparation of a Detailed Project Report will entail the assessment of numerous parameters including economic and engineering feasibility, environmental impacts, and social and cultural effects. The primary purpose of this report will be to identify, evaluate, and compare all possible avenues of project implementation to achieve local, State, and Federal goals in the most favorable manner possible.

Inclosed is a list of eight items of local cooperation which a community participating in a navigational improvement authorized under Section 107 must agree to meet before project implementation. Prior to our forwarding a favorable recommendation of further study to the Office of the Chief of Engineers, we will require a letter from your office stating your interest for us to proceed with the investigation. If a favorable plan of improvement is recommended in the Detailed Project Report and authorized by the Chief of Engineers, you will be required to enter into a contractual agreement to meet these items of local cooperation during the preparation of plans and specifications prior to construction.

NEDPL-C

Mrs. Roberta Brown

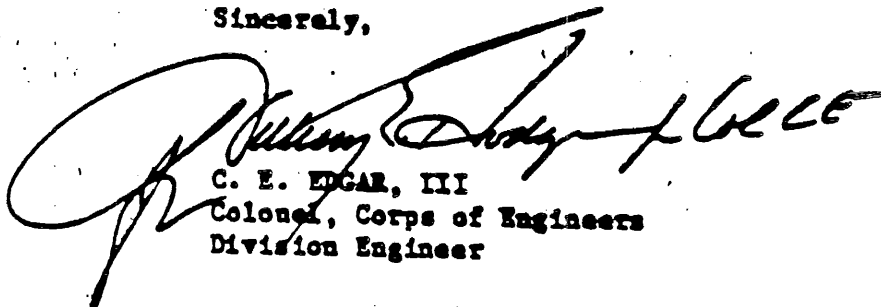
MAR 08 1982

Should project feasibility be based solely on and for commercial navigation, no local cost contribution towards construction is required. However, if both commercial and recreational benefits are used to justify Federal involvement in the proposed project, a percentage of cost reflecting the recreational benefit percentage would be borne by non-Federal interests. It should also be emphasized that regardless of the initial cost sharing on the first cost of construction, all future maintenance costs would become a Federal responsibility.

Should your office make the determination for us to proceed with the investigation, your letter along with our recommendations will be forwarded to the Office of the Chief of Engineers. Should they approve my recommendation, Josias River and Perkins Cove will be placed on our list of pending Detailed Project Reports. As this office handles all requests on a first-come, first-serve basis and due to funding limitations, the present schedule as outlined indicates initiating the Detailed Project Report in Fall 1984.

Should you have any questions, please feel free to contact me at (617) 894-2400, extension 220. Mr. Mark Habel of my staff is coordinating the investigation. Should your staff desire more information, he can be reached at extension 550.

Sincerely,



C. E. EDGAR, III
Colonel, Corps of Engineers
Division Engineer

Incl
As stated

ITEMS OF LOCAL COOPERATION

The following is a list of items of local cooperation under Section 107 the community must agree to meet prior to project implementation.

(1) Provide a cash contribution toward construction costs, determined in accordance with existing policies for regularly authorized projects, in view of recreational benefits, land enhancement benefits or similar type special and local benefits expected to accrue. The present basis for cost-sharing in recreational small boat projects provides that the Federal Government will participate to not more than 50 percent of the first costs of general navigation facilities serving recreational traffic.

(2) Provide, maintain and operate without cost to the United States, an adequate public landing with provisions for the sale of motor fuel, lubricants and potable water open and available to the use of all on equal terms.

(3) Provide without cost to the United States all necessary lands, easements, and rights-of-way required for construction and subsequent maintenance of the project including suitable dredged material disposal areas with necessary retaining dikes, bulkheads and embankments therefor.

(4) Hold and save the United States free from damages that may result from construction and maintenance of the project except where such damages are due to the fault or negligence of the United States or its contractors.

(5) Accomplish without cost to the United States alterations and relocations as required in sewer, water supply, drainage and other utility facilities.

(6) Provide and maintain berths, floats, piers, and similar marina and mooring facilities as needed for transient and local vessels as well as necessary access roads, parking areas and other needed public use shore facilities open and available to all on equal terms. Only minimum, basic facilities and services are required as part of the project. The actual scope or extent of facilities and services provided over and above the required minimum is a matter of local decision. The manner of financing such facilities and services is a local responsibility.

(7) Assume full responsibility for all project costs in excess of the Federal cost limitation of \$2,000,000.

(8) Establish regulations prohibiting the discharge of untreated sewage, garbage, and other pollutants in the waters of the harbor users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollution prevention and control.



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254

REPLY TO
ATTENTION OF

NEDPL-C

MAY 15 1981

Mrs. Roberta Brown
Town Manager
Town of Ogunquit
Municipal Offices
School Street
Ogunquit, ME 03907

Dear Mrs. Brown:

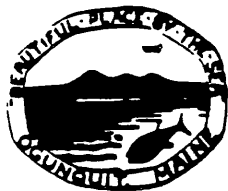
I am pleased to inform you that we have initiated a small navigation improvement study for Josias River at Perkins Cove, Ogunquit, Maine in response to your letter dated 6 May 1981.

The initial study stage will be a reconnaissance which will determine if further detailed study of providing improvements to the existing Federal project, including deepening of the existing anchorage basin in the Josias River at Flat Pond and deepening of the access channel to the Pond from Perkins Cove is warranted. It is expected that this stage will be completed by the fall of this year. At that time, copies of the draft reconnaissance report describing the study process and findings will be transmitted to you for your review and concurrence.

Should you have any questions, please feel free to contact me at (617) 894-2400, extension 220. Mr. Habel of my staff is coordinating the investigation. Should your staff desire additional information, he can be reached at extension 556.

Sincerely,

C. E. EDGAR, III
Colonel, Corps of Engineers
Division Engineer



TOWN of OGUNQUIT

S. Judson Dunaway Community Center

MUNICIPAL OFFICES

May 6, 1981

School Street
Ogunquit, Maine 03907

(207) 646-9361

Colonel C. E. Edgar III
Division Engineer
Corps of Engineers
New England Division
424 Trapelo Road
Waltham, Mass. 02154

Re: Perkins Cove
Ogunquit, Maine
Requested Project per
Section 107 of the 1960
Rivers and Harbors Act, As Amended

Dear Colonel Edgar:

On April 22, 1981, a meeting was held at the Ogunquit Town Hall to discuss the captioned matter. Those attending were Mr. Habel of the Coastal Development Branch, members of the Board of Selectmen, the Harbor Master, several fishermen, as well as myself.

The purpose of the meeting was to discuss the necessary steps to deepen the Corps' authorized dredged depth of Perkins Cove. The discussion was very constructive and we appreciate Mr. Habel's time and efforts concerning our request.

Please accept this letter as an official request from the Town of Ogunquit for an investigation pursuant to Section 107 of the 1960 Rivers and Harbors Act, As Amended to deepen the Corps' dredged depth of Perkins Cove.

Mr. Habel distributed a questionnaire for completion; a subsequent meeting was held on April 29, 1981 for that purpose and the completed forms are enclosed herewith.

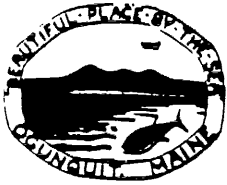
Please advise if further information is needed to initiate this project. We look forward to development of this work in the near future and anxiously await your advice.

Very truly yours,

Roberta Brown

Mrs. Roberta Brown
Town Manager

RB/dsk
Enclosure
cc: Board of Selectmen
Harbor Master



Ogunquit Village Corporation

MUNICIPAL OFFICE

S. Judson Dunaway Community Center
School Street - Ogunquit, Maine 03907

Village Offices
(207) 646-9361

Monday thru Friday

July 12, 1978

Colonel John P. Chandler, Division Engineer
Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02154

Dear Colonel Chandler:

RE: Perkins Cove, Josias River Basin
Ogunquit, Maine

This letter is to formally request a study of the captioned channel under section 107 authorities (small navigation authority).

The established dredged depth of the channel is now five (5) feet and many of the commercial mooring holders have experienced navigation and docking problems. It appears that in recent years commercial boats are built larger and have a deeper draw and this contributes to the problems.

Please advise this office as to any additional information you require to initiate this study.

Your attention to this matter is appreciated.

Very truly yours,

MRS. ROBERTA BROWN
Village Manager

RB:ib

APPENDIX 2

ENGINEERING INVESTIGATIONS
AND DESIGN AND COST ESTIMATES

APPENDIX 2

ENGINEERING INVESTIGATIONS, DESIGN AND COST ESTIMATES

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APPENDIX 2
ENGINEERING AND INVESTIGATIONS
DESIGN AND COST ESTIMATES

INTRODUCTION

This appendix contains two sections. Section A outlines the various field activities and investigations conducted during the course of the detailed study. Section B provides a detailed engineering analysis of the various alternative federal plans based on those investigations described in Section A.

APPENDIX 2

SECTION A

ENGINEERING INVESTIGATIONS

SECTION A

ENGINEERING INVESTIGATIONS

DESCRIPTION OF PROJECT AREA

The Perkins Cove Small Navigation Project is located in the Josias River channel and Flat Pond in the town of Ogunquit, Maine. The area bedrock consists of Silurian age low-grade metamorphosed mudstones which are part of a NE-SW trending belt of similar rocks extending from south-eastern Maine to northeastern Massachusetts. Bedrock is exposed in the immediate area of the project along the shoreline, but is not known to occur in the confines of the present project. However, boring FD-84-13 encountered a bouncing refusal at -5.8 feet MLW which may indicate shallow bedrock in the outer channel area. The surficial geology is transitory from shallow till-covered bedrock to the thick outwash prevalent north of Ogunquit. Most of the borings encountered both till and reworked outwash.

The coastal morphology around the Perkins Cove area is transitional between the submerged coastline landform which is well developed north of Portland and a coastal plain landform which becomes better developed south of Ogunquit. The land surface rises on all sides of the anchorage area on the south side of the channel to around 20 to 30 feet National Geodetic Vertical Datum (NGVD) within a short distance of the water line. As a result, the Josias River enters the Cove by way of a waterfall. Most of the north side of the channel is low and flat filled land with exception of the headland which has an elevation of about 20 feet and forms large areas of exposed rock along the shoreline.

The Josias River is influenced by tidal conditions at Perkins Cove. Therefore, the datum used for recording elevations for all subsurface explorations is mean low water (MLW). The mean tide range in the cove is approximately 8.6 feet. Zero feet MLW is approximately equal to -4.0 feet NGVD.

FIELD INVESTIGATIONS

Field investigations were conducted during the detailed study to determine the ground surface elevation, type and composition of substrate, extent of ledge, and other physical characteristics which would effect plan formulation. This work included hydrographic surveys, subsurface investigations, and sediment analysis. The base data obtained from these field investigations was used to develop and evaluate alternative plans of improvement.

HYDROGRAPHIC SURVEYS

A hydrographic condition survey of Perkins Cove was conducted in December 1983 by Tibbetts Engineering Corporation. The results of this survey are shown in Figure 2-1.

SUBSURFACE INVESTIGATIONS

Drive sample borings and machine probes were completed to determine the characteristics and distribution of the overburden soil and to determine if there is any bedrock located within the proposed dredged zone. Exploration depths were established based on maximum anticipated dredge depths in Perkins Cove.

Test Borings

Test drive sample borings were conducted at the project site in May 1984. A total of twenty-seven borings were made. Twenty-five continuous drive sample borings were driven a minimum of five feet or to refusal and two were driven to a specified depth of -15 feet MLW or refusal using a 300 pound hammer with an 18-inch drop where refusal is defined as 100 blows with no penetration or bouncing refusal. A 2.5-inch I.D. by 5-foot long solid barrel sampler was used to obtain soil samples and an NX size core barrel was used to obtain rock samples. These borings were made in order to determine the type of material that would be encountered at various depths. A graphic representation of this information is summarized in subsequent sections and in the boring log summaries shown in Figures 2-2A and 2-2B. The locations of these borings are shown in Figure 2-3.

Machine Probing

Eleven machine probings were performed in the project area in May 1984. The purpose of these probes was to establish the top elevation of any existing ledge in these areas. The machine probes were performed by advancing an open-end AW drill rod from the mudline to -10.0 feet MLW or refusal by the impact of a 300 pound hammer falling freely through an 18-inch drop, recording the number of blows per foot of penetration. A graphic representation of the results of these probes is summarized in Figure 2-2A. The locations of the probings are shown in Figure 2-3.

Foundations Conditions

Following are the results of the subsurface investigation program that was conducted at Perkins Cove. Additional information including soil gradations and other physical test parameters is contained in subsequent sections.

The stratigraphy of the soils in Perkins Cove as portrayed by the information obtained from the machine probings and drive sample borings is fairly consistent within the proposed dredge area. The upper 1 to 2 feet consists of loose dark olive-gray silty sands (SM-SP) containing shell fragments and organics with marine odor. Isolated surficial pockets of dark-gray sandy-gravel were indicated by boring FD-84-5 and FD-84-20. Below the surficial deposit is medium compact sand and very loose to loose sandy-clay pockets to an undetermined depth.

Bedrock was encountered in boring FD-84-18 at an elevation of -11.5 feet MLW. Possible bedrock was indicated by refusal between elevation -6 and -11 feet MLW at eight other explorations along the channel and in the northeast portions of the anchorage. The proposed dredging project will require about one foot of rock excavation in the northeast edges of the anchorage in order to deepen to -7 feet MLW.

NATURE OF THE MATERIAL TO BE REMOVED

In order to determine the nature of the material to be removed under each plan, sediment samples were obtained from 12 of 27 drive sample borings and visually classified in the field as well as in the New England Division laboratory using the Unified Classification System. The results of the subsurface investigations and physical testing revealed ledge along the northeastern edge of the proposed anchorage which would require blasting activity for any plan entailing project limits greater than -6 feet MLW.

Sediment Analysis

Samples were taken from 6 sites (A-F) in December 1983 in conjunction with the environmental sampling program. Samples A, B, C, D, and F were taken using grab sampling devices. The site E sample was a sediment core. Twelve additional samples were taken in May 1984 in conjunction with the subsurface investigation program. All of these samples were taken using a tube sampling device. Physical tests consisting of mechanical seive, specific gravity, and percent solids were conducted on all samples. Hydrometer analysis was also conducted on the 1983 samples. The locations of the 18 sediment sample sites are shown in Figure 2-4. The results of the tests on the 1983 samples are shown in Table 2-1. The results of the tests conducted on the 1984 samples are shown in Table 2-2. Grain size distribution curves developed from mechanical analysis of samples taken in conjunction with the environmental program are shown in Figures 2-5A thru F. Analysis of core samples taken in conjunction with the subsurface exploration program are shown in Figure 2-6A thru L.

TABLE 2-1
PERKINS COVE, OGUNQUIT, MAINE
DECEMBER 1983
PHYSICAL TEST RESULTS - MARINE SEDIMENT - ENVIRONMENTAL SAMPLES

PARAMETERS	SITE A	SITE B	SITE C	SITE D
VISUAL CLASSIFICATION	Dark gray sandy gravel (GP) with shell fragments.	Black sandy gravel (GW) with shell fragments.	Dark gray silty fine sand (SM).	Dark gray organic sandy silt (ML).
Grain Size - Median (mm)	10.2000	18.0000	0.1500	0.0650
Grain Size - Median D75	28.0000	25.0000	0.1800	0.1400
Grain Size - Median D25	0.1500	8.8000	0.1000	0.0250
Normal (N) or Bimodal (B)	B	N	N	N
Specific Gravity	2.69	2.67	2.66	2.64
% Fines	<1.0%	<1.0%	18.0%	52.0%
Average Percent Solids	75.7%	80.9%	76.3%	63.1%
Liquid Limit	non-plastic	non-plastic	non-plastic	non-plastic
Plastic Limit	non-plastic	non-plastic	non-plastic	non-plastic
Plastic Index	non-plastic	non-plastic	non-plastic	non-plastic
% Volatile Solids - EPA (Average)	1.14%	1.99%	3.42%	8.27%
% Volatile Solids - NED (Average)	0.49%	0.86%	1.51%	6.28%

Table 2-1 (cont'd)
 PERKINS COVE, OGUNQUIT, MAINE
 DECEMBER 1983
PHYSICAL TEST RESULTS - MARINE SEDIMENT - ENVIRONMENTAL SAMPLES

PARAMETER	SITE E	SITE F
VISUAL CLASSIFICATION	Dark Gray sandy silt (ML)	Dark Gray Organic sandy silt (OH)
Grain Size - Median (mm)	0.0450	0.0220
Grain Size - Median D75	0.1200	0.1700
Grain Size - Median D25	0.0190	0.0070
Normal (N) or Bimodal (B)	N	B
Specific Gravity	2.62	2.46
% Fines	65.0%	60.0%
Average Percent Solids	64.8%	40.7%
Liquid Limit	non-plastic	non-plastic
Plastic Limit	non-plastic	non-plastic
Plastic Index	non-plastic	non-plastic
% Volatile Solids - EPA (Average)	4.12	15.17%
% Volatile Solids - NED (Average)	3.54%	12.35%

TABLE 2-2
PERKINS COVE, OGUNQUIT, MAINE
PHYSICAL TEST RESULTS - MARINE SEDIMENT - BORING CORES

PARAMETER	FD-84-2 CHANNEL	FD-84-3 CHANNEL	FD-84-4 CHANNEL	FD-84-8 CHANNEL
VISUAL CLASSIFICATION	Olive-gray Clayey sandy Gravel (GC)	Very dark-gray Silty gravelly Sand (SM) with Marine Odor	Dark-gray Gravelly silty Sand (SM)	Olive-gray Gravelly silty Sand (SM)
Depth (Feet)	0.0 - 5.0	0.0 - 5.0	0.0 - 5.0	0.0 - 5.0
Grain Size - Median (mm)	13.0000	1.5000	0.3200	0.3700
Grain Size - Median D_{75}	32.0000	12.0000	4.5000	7.0000
Grain Size - Median D_{25}	0.2800	0.1200	0.0630	0.0580
Normal (N) or Bimodal (B) Curve	N	N	N	N
Specific Gravity	--	--	2.73	2.77
% Fines	15.0	16.0	28.0	29.5

TABLE 2-2
PERKINS COVE, OGUNQUIT, MAINE
PHYSICAL TEST RESULTS - MARINE SEDIMENT - BORING CORES

PARAMETER	FD-84-19 LOWER ANCHORAGE	FD-84-23 LOWER ANCHORAGE	FD-84-24 LOWER ANCHORAGE	FD-84-25 LOWER ANCHORAGE
VISUAL CLASSIFICATION	Gray Sandy Clay (CH) Gravel (GC)	Dark-gray Sandy clay (CL)	Light-gray Gravelly silty Sand (SM)	Olive-gray Sandy clay (CL)
Depth (Feet)	0.0-7.0	0.0-7.0	10.0-15.0	0.0-6.5
Grain Size - Median (mm)	0.0075	0.0220	0.1300	0.0150
Grain Size - Median D_{75}	0.0320	0.0710	2.2500	0.0595
Grain Size - Median D_{25}	0.0010	0.0018	0.0650	0.00019
Sorting Coefficient				
Normal (N) or Bimodal (B) Curve	N	B	B	N
Specific Gravity	2.75	2.73	--	2.75
% Fines	95.0	76.5	37.0	80.5

TABLE 2-2 (Cont'd)
 PERKINS COVE, OGUNQUIT, MAINE
 PHYSICAL TEST RESULTS - MARINE SEDIMENT - BORING CORES

PARAMETER	FD-84-9 CHANNEL	FD-84-11 CHANNEL	FD-84-14 CHANNEL	FD-84-15 CHANNEL
VISUAL CLASSIFICATION	Gray-silty Gravelly Sand (SM)	Dark yellowish- -brown silty gravelly sand (SM)	Dark grayish - -brown silty sandy gravel (GM)	Gray sandy Clay
Depth (Feet)	0.0 - 5.0	0.0 - 5.0	0.0 - 5.0	0.0 - 5.0
Grain size - Median (mm)	1.1500	1.500	7.9000	0.0330
Grain size - Median D_{75}	9.0500	10.100	43.000	0.0520
Grain size - Median D_{25}	0.0910	0.0910	0.4050	0.0047
Normal (N) or Bimodal (B) Curve	B	B	B	B
Specific Gravity	2.79	--	--	2.76
% Fines	22.0	22.5	11.5	87.0

CHANNEL ANCHORAGE CROSS-SECTIONS

Data developed from the hydrographic survey and subsurface investigations were used to develop several representative cross-sections of the area selected for detailed study. In all areas a one foot allowable overdepth was assumed for ordinary material, and a two foot allowable overdepth for bedrock. Typical cross-sections for the areas to be dredged are shown in Figure 2-7, and the locations of these cross-section appear in Figure 2-8.

QUANTITY ESTIMATES

In order to determine quantities of material to be removed under each plan, quantity estimates were developed for selected dredge depths chosen for detailed analysis. These incremental dredge quantities are shown in Table 2-3.

TABLE 2-3
PERKINS COVE, OGUNQUIT, MAINE
QUANTITIES OF MATERIAL TO BE REMOVED

ESTIMATED VOLUME TO BE REMOVED (CUBIC YARDS)

<u>PLAN</u>	<u>Cut to Depth</u>	<u>Overdepth Increment</u>	<u>Total Volume</u>
PLAN A - 6-FOOT CHANNEL AND ANCHORAGE (4 week constr. period)			
<u>Channel</u>			
- Ordinary Material	2,100	2,400	4,500
- Rock	None	None	None
<u>Anchorage</u>			
- Ordinary Material	4,300	3,600	7,900
- Rock	None	None	None
<u>Total</u>			
- Ordinary Material	6,400	6,000	12,400
- Rock	None	None	None
PLAN B - 7-FOOT CHANNEL AND ANCHORAGE (8 week constr. period)			
<u>Channel</u>			
- Ordinary Material	4,700	2,800	7,500
- Rock	None	100	100
<u>Anchorage</u>			
- Ordinary Material	8,000	4,200	12,200
- Rock	None	100	100
<u>Total</u>			
- Ordinary Material	12,700	7,000	19,700
- Rock	None	200	200
PLAN C - 8-FOOT CHANNEL AND ANCHORAGE (10 week constr. period)			
<u>Channel</u>			
- Ordinary Material	7,400	3,200	10,600
- Rock	None	500	500
<u>Anchorage</u>			
- Ordinary Material	12,000	4,300	16,300
- Rock	None	500	500
<u>Total</u>			
- Ordinary Material	19,400	7,500	26,900
- Rock	None	1,000	1,000

PERKINS COVE
OGUNQUIT, MAINE

APPENDIX 2
SECTION B

DESIGN AND COST ESTIMATES

SECTION B ANALYSIS OF PLANS

Three detailed plans were selected for study. Plan A entails dredging of the 40-foot wide entrance channel and the lower 2.1 acres of the existing 4.2-acre anchorage to a depth of -6' MLW. Plan B specifies a depth of -7' MLW and Plan C specifies a depth of -8' MLW for the same area. All three plans have identical channel and anchorage limits and involve dredging ordinary material while Plans B and C involve some blasting and rock removal as well. In each case, ordinary material and rock would be removed by a mechanical dredge, placed on a deck barge for transport through the 40-foot wide foot bridge, then placed in a dump scow and towed to the Cape Arundel disposal site, located approximately two miles northeast of Perkins Cove. Costs provided include contingencies; mobilization and demobilization; monies for supervision & administration, and engineering & design. In order to accomplish the dredging, blasting, and disposal of ordinary material and rock under each plan a typical construction plant consisting of the following equipment would be necessary: a dredge barge with a dredge and a 5 cy bucket; a drill rig for blasting attached to the dredge barge; a 1000 horsepower (HP) tug; a 165 HP launch and a dump scow. Construction periods including time for mobilization and demobilization are estimated to be four weeks for Plan A, six weeks for Plan B, and ten weeks for Plan C. The alternative plans of improvement are shown in Figure 2-9.

QUANTITIES OF MATERIAL TO BE REMOVED

The quantities of material to be removed were calculated for each of the proposed dredge depths. The incremental dredged quantities are shown in Table 2-3 and are based on one foot of allowable dredged overdepth for ordinary material and two feet for rock.

COST ESTIMATES

The cost estimates for dredging, blasting, and disposal are based on the construction durations given in Table 2-3 and the alternatives of disposal of dredge material at the designated upland disposal site two miles from Perkins Cove or disposal at the ocean disposal site seven nautical miles from Perkins Cove. These costs shown in Table 2-4, Table 2-5, and Table 2-6 are computed using April 1987 price levels.

TABLE 2-4
PERKINS COVE, ME
PLAN A
FIRST COST OF FEDERAL IMPROVEMENT
6-Foot Channel and Anchorage

Upland Disposal

Mobilization/Demobilization	23,000
Dredging	
Ordinary Material at \$13.00/cy	
12,450 cubic yards	<u>\$162,000</u>
Subtotal	185,000
Contingencies	<u>37,000</u>
Subtotal	\$222,000
Engineering and Design	30,000
Supervision and Administration	<u>41,000</u>
Subtotal	\$293,000
Disposal	
Dredged Material Dewatered and Hauled to Disposal Site	
12,450 cy at \$9.30/cy	<u>116,000</u>
TOTAL FIRST COST	\$409,000
INTEREST DURING CONSTRUCTION (4 Weeks)	<u>1,000</u>
	\$410,000

Ocean Disposal

Mobilization/Demobilization	23,000
Dredging	
Ordinary Material at \$13.00/cy	
12,450 cubic yards	<u>\$162,000</u>
Subtotal	185,000
Contingencies	<u>37,000</u>
Subtotal	\$222,000
Engineering and Design	30,000
Supervision and Administration	<u>41,000</u>
Subtotal	\$293,000
Disposal	
Dredged material rehandled to dump scow and towed	
to ocean disposal site 12,450 cy at \$4.10/cy	<u>51,000</u>
TOTAL FIRST COST	\$344,000
INTEREST DURING CONSTRUCTION (4 Weeks)	<u>1,000</u>
	\$345,000

TABLE 2-5
PERKINS COVE, ME
PLAN B
FIRST COST OF FEDERAL IMPROVEMENT
7-Foot Channel and Anchorage

Upland Disposal

Mobilization/Demobilization	34,000
Dredging	
Ordinary Material at \$12.10/cy	
19,700 cubic yards	\$238,000
Rock - 200 cy at \$138.50/cy	<u>28,000</u>
Subtotal	\$300,000
Contingencies	60,000
Subtotal	\$360,000
Engineering and Design	30,000
Supervision and Administration	<u>50,000</u>
Subtotal	\$440,000
Disposal	
Dredged Material Dewatered and Hauled to Disposal Site	
19,900 cy at \$9.30/cy	<u>185,000</u>
TOTAL FIRST COST	\$625,000
INTEREST DURING CONSTRUCTION (8 Weeks)	1,000
	<u>\$626,000</u>

Ocean Disposal

Mobilization/Demobilization	34,000
Dredging	
Ordinary Material at \$12.10/cy	
19,700 cubic yards	\$238,000
Rock - 200 cy at \$138.50/cy	<u>28,000</u>
Subtotal	\$300,000
Contingencies	60,000
Subtotal	\$360,000
Engineering and Design	30,000
Supervision and Administration	<u>50,000</u>
Subtotal	\$440,000
Disposal	
Dredged material rehandled to dump scow and towed	
to ocean disposal site 19,900 cy at \$3.85/cy	<u>77,000</u>
TOTAL FIRST COST	\$517,000
INTEREST DURING CONSTRUCTION (6 Weeks)	1,000
	<u>\$518,000</u>

TABLE 2-6
PERKINS COVE, ME
PLAN C
FIRST COST OF FEDERAL IMPROVEMENT
8-Foot Channel and Anchorage
Upland Disposal

Mobilization/Demobilization	34,000
Dredging	
Ordinary Material at \$11.70/cy	
26,900 cubic yards	\$314,000
Rock - 1,000 cy at \$108.50/cy	109,000
Subtotal	<u>\$457,000</u>
Contingencies	91,000
Subtotal	<u>\$548,000</u>
Engineering and Design	30,000
Supervision and Administration	48,000
Subtotal	<u>\$626,000</u>
Disposal	
Dredged Material Dewatered and Hauled to Disposal Site	
27,900 cy at \$9.30/cy	<u>259,000</u>
TOTAL FIRST COST	\$885,000
INTEREST DURING CONSTRUCTION (10 Weeks)	<u>5,000</u>
	<u>\$890,000</u>

Ocean Disposal

Mobilization/Demobilization	34,000
Dredging	
Ordinary Material at \$11.70/cy	
26,900 cubic yards	\$314,000
Rock - 1,000 cy at \$108.50/cy	109,000
Subtotal	<u>\$457,000</u>
Contingencies	91,000
Subtotal	<u>\$548,000</u>
Engineering and Design	30,000
Supervision and Administration	48,000
Subtotal	<u>\$626,000</u>
Disposal	
Dredged material rehandled to dump scow and towed	
to ocean disposal site 27,900 cy at \$4.60/cy	<u>129,000</u>
TOTAL FIRST COST	\$755,000
INTEREST DURING CONSTRUCTION (10 Weeks)	<u>4,000</u>
	<u>\$759,000</u>

SELECTED PLAN

The Selected Plan, as determined through economic and environmental analysis, is Plan B. This plan would entail dredging of ordinary material and rock removal to deepen the existing Federal channel and the lower 2.1 acres of the existing 4.2-acre Federal Anchorage from their present -5-foot MLW depth to -7 feet MLW. This would provide the existing commercial fleet with safe access and anchorage at all tidal stages thereby increasing operational efficiency. The recommended plan of improvement is shown in Figure 2-9.

AIDS TO NAVIGATION

Specific cost for aids to navigation will be obtained from the U.S. Coast Guard, which would be responsible for placing and maintaining any aids they deem necessary for boating safety. For purposes of this report assumptions were made regarding requirements for such aids.

There are two existing Coast Guard navigation buoys, both steel cans, marking the entrance channel to Perkins Cove. It is estimated that no additional navigation aids will be required as only project deepening is being considered.

DISPOSAL OF DREDGED MATERIAL

Both upland disposal sites and an ocean disposal site have been identified for disposal of the dredged material from Perkins Cove. Upland disposal would result in less environmental impact while ocean disposal would entail less social and community impacts and less cost.

The identified ocean disposal site as described in the Main Report and Environmental Assessment is the Cape Arundel Disposal Site. This approved ocean disposal site is located about seven nautical miles northeast of Perkins cove and three miles offshore of Cape Arundel in Kennebunkport. The site has previously been used for disposal of dredged material from Cape Porpoise Harbor and the Kennebunk River. For ocean disposal the material would be removed by bucket dredge and place on a deck scow and towed through the footbridge to the entrance channel where it would be rehandled onto larger dump scows and towed to the disposal site.

The town of Ogunquit has identified two potntial upland disposal sites. The material removed by mechanical dredge would be placed on deck scows which would then berth alongside the boatyard area. The material would be offloaded from the scows to the bulkhead area previously constructed by the town of Ogunquit for dewatering. Once dewatered the material would be loaded on trucks for transport to an upland disposal site. Federal resource agencies have not identified any constraints to either site. Both sites are located within a distance of 2 miles, by road, of the project site. One site is a private landfill in Ogunquit

currently operated as a dump for stumps and miscellaneous debris by the local sewer district. The second is a former quarry pit in the neighboring town of York. The Maine Department of Environmental Protection has indicated that upland disposal would not be allowed since the dredged material has exhibited PCB levels above detection limits. It is unlikely that either site could obtain the Class 2 waste disposal license required by the State. The local sponsor would be responsible for all costs of site licensing and costs associated with dewatering, rehandling, site preparation and transportation of the dredged material. Final site selection will be made during preparation of plans and specifications.

MAINTENANCE COSTS

Maintenance of various navigation improvements proposed under each alternative plan would be necessary at estimated intervals throughout the 50-year project life. Maintenance of the channels and anchorages to their authorized depths would be necessary to ensure the continued efficiency of the developed harbor. Continued maintenance of the existing aids to navigation would also be necessary.

Following initial dredging the channel and anchorage would tend to shoal or fill in because of settlement of material from side slopes, deposition of material derived from upland erosion, and from current and tidal action.

Channel side slopes would be designed in such a way as to enhance long-term stability, although changes to the bottom contours would occur over time, resulting in a gradual flattening of the slopes. Strong current action occurring during storms may result in the movement of bottom sediments. The propeller wash and waves produced by passing vessels would also tend to disturb the anchorage and channel bottom, resulting in the redistribution of bottom sediments.

The last improvements to Perkins Cove were made in the spring of 1960 when the 5-foot anchorage was enlarged by an additional acre. At that time 26,000 cy of ordinary material and 3,500 cy of rock were removed from the northern reaches of the upper basin. Disposal was at a site offshore.

Maintenance of the Perkins Cove project has been accomplished twice since the last improvements. In 1967 approximately 5,500 cy of ordinary material was removed by hydraulic dredging and deposited on the beach at Oarweed Cove. In 1976 an additional 900 cy of ordinary material was removed by bucket dredge, dewatered on the parking lot and deposited upland. No maintenance dredging has been accomplished since 1976 and none is considered necessary at this time.

In order to determine annualized maintenance cost resulting from the proposed improvement, estimates must be made of the with and without improvement maintenance costs. In the 16 years between the last improvement dredging in 1960 and the last maintenance operations in 1976, a total

improvement dredging in 1960 and the last maintenance operations in 1976, a total of 6,400 cy were removed as a result of two maintenance operations. This results in an average annual shoaling rate of about 400 cy per year. Since 1976 shoaling has been negligible and no maintenance is considered necessary. The present annual shoaling rate for maintaining the existing 5-foot project, or without-improvement condition, is probably less than 400 cy.

The proposed alternatives would deepen the channel and lower basin depths by 1, 2, or 3 feet. Sedimentation due to upland erosion would not be increased by the proposed alternatives. Side slope settling would be negligible due to the existing bulkheading, ledge and cobble which make up the shoreline of the basin and channel. With-project shoaling would be limited to a slight increase in shoaling of the channel due to longshore sediment transport. Due to the rocky nature of the headlands abutting the outer cove to either side, this increase is expected to be negligible. None of the proposed improvements would, if implemented, result in an increase in the frequency of necessary maintenance operations. For purposes of economic analysis an annual rate of one percent of the improvement volume for each plan will be used. The estimated annual cost of increased maintenance dredging is shown in Table 2-7.

TABLE 2-7
PERKINS COVE, OGUNQUIT, MAINE
MAINTENANCE DREDGING COSTS

	PLAN A 6-Feet 12,400 cy	PLAN B 7-Feet 19,700 cy	PLAN C 8-Feet 26,900 cy
Improvement Quantity (Ordinary Material)			
Annual Shoaling (one percent)	125 cy	200 cy	270 cy
Cost/cy (Ordinary Material) including disposal, E&D and S&A	\$29.80	\$27.00	\$25.40
Annual Maintenance Cost	\$3,700	\$5,400	\$6,900

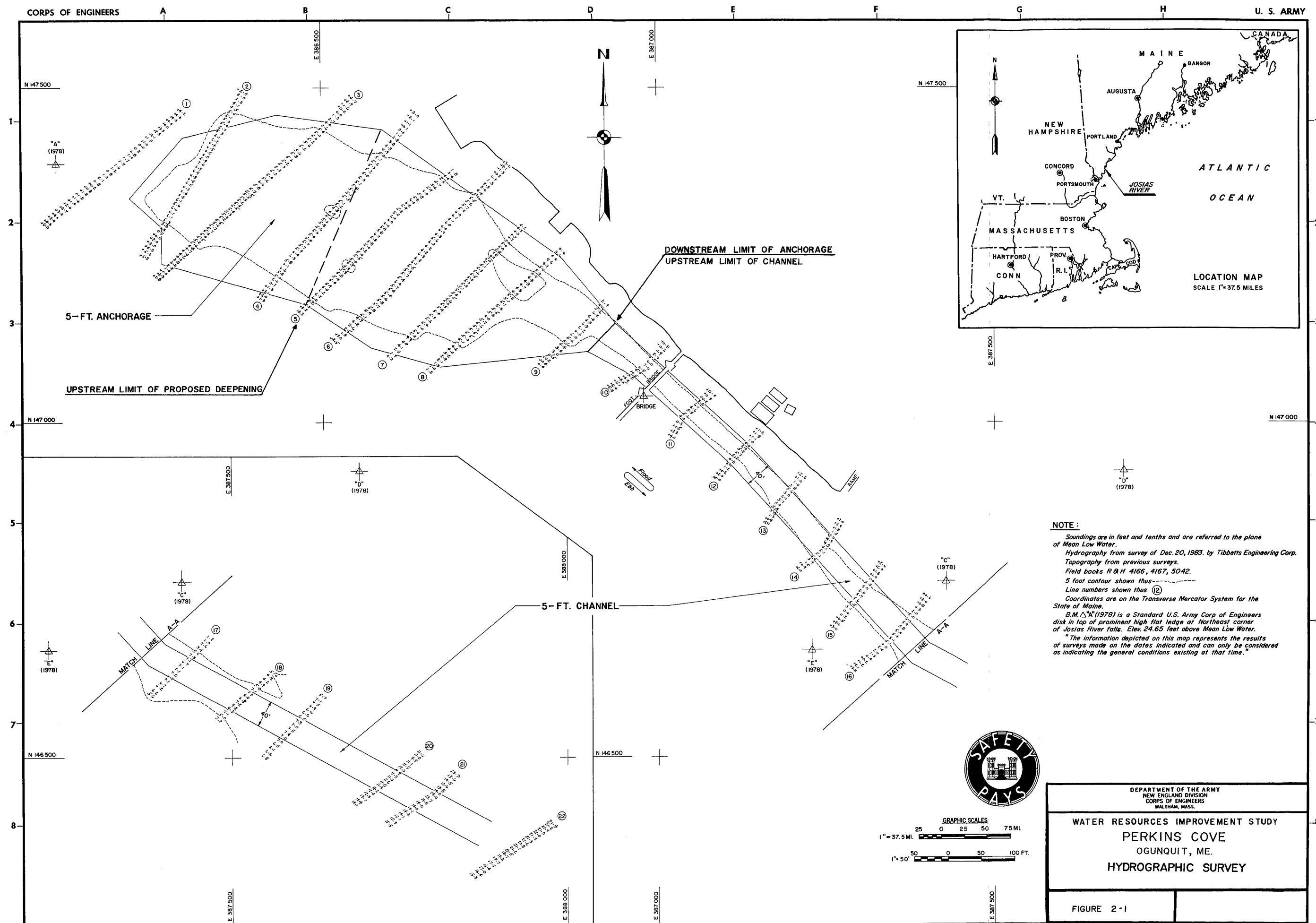
In the future it may be required that in order to accomplish maintenance dredging activities an upland disposal site would have to be secured. It would be a local responsibility to locate such an upland disposal site and fund construction of any necessary features as defined in point 3 of the items of local assurance found in the main report.

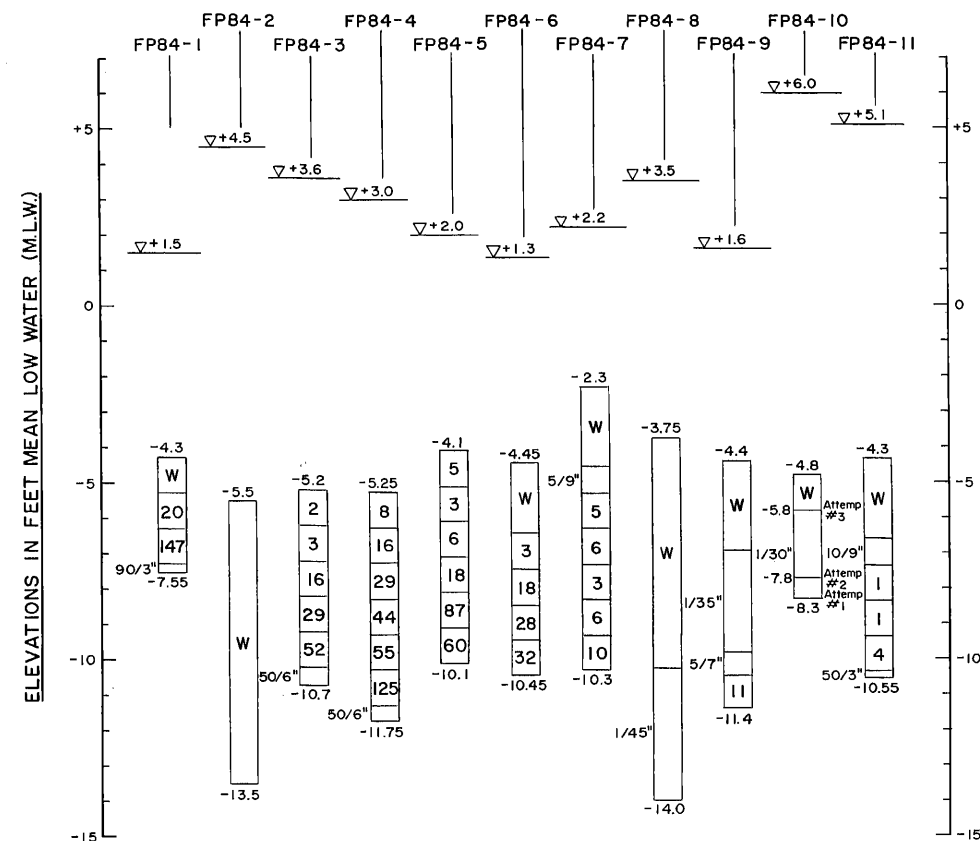
ANNUAL CHARGES

Annual charges assessed to each detailed plan are a combination of annual maintenance costs and the annual interest and amortization charges resulting from the cost of improvement assessed over the 50-year project life. The charge for interest and amortization is based on a rate of 8-7/8 percent. The annual charges for each plan are shown below in Table 2-8.

TABLE 2-8
PERKINS COVE, OGUNQUIT, MAINE
FEDERAL PROJECT ALTERNATIVES
SUMMARY OF ANNUAL CHARGES

<u>PLAN A</u>		
	<u>Upland Disposal</u>	<u>Ocean Disposal</u>
Amortization of Total Investment Cost	\$36,600	\$28,300
Maintenance Dredging	<u>3,700</u>	<u>3,700</u>
TOTAL ANNUAL CHARGES - PLAN A	\$40,300	\$32,000
SAY	\$40,000	\$32,000
 <u>PLAN B</u>		
	<u>Upland Disposal</u>	<u>Ocean Disposal</u>
Amortization of Total Investment Cost	\$56,400	\$43,600
Maintenance Dredging	<u>5,400</u>	<u>5,400</u>
TOTAL ANNUAL CHARGES - PLAN B	\$61,800	\$49,000
SAY	\$62,000	\$49,000
 <u>PLAN C</u>		
	<u>Upland Disposal</u>	<u>Ocean Disposal</u>
Amortization of Total Investment Cost	\$80,800	\$65,000
Maintenance Dredging	<u>6,900</u>	<u>6,900</u>
TOTAL ANNUAL CHARGES - PLAN C	\$87,700	\$71,900
SAY	\$88,000	\$72,000





GRAPHIC MACHINE PROBING LOGS

SCALE: 1" = 2.0 FT.

LEGEND GRAPHIC PROBING LOGS

FP84-8 MACHINE PROBE NUMBER

▽ +3.1 WATER LEVEL ELEVATION

+5.0 ELEVATION OF GROUND SURFACE
AT TOP OF PROBING (M.L.W.)

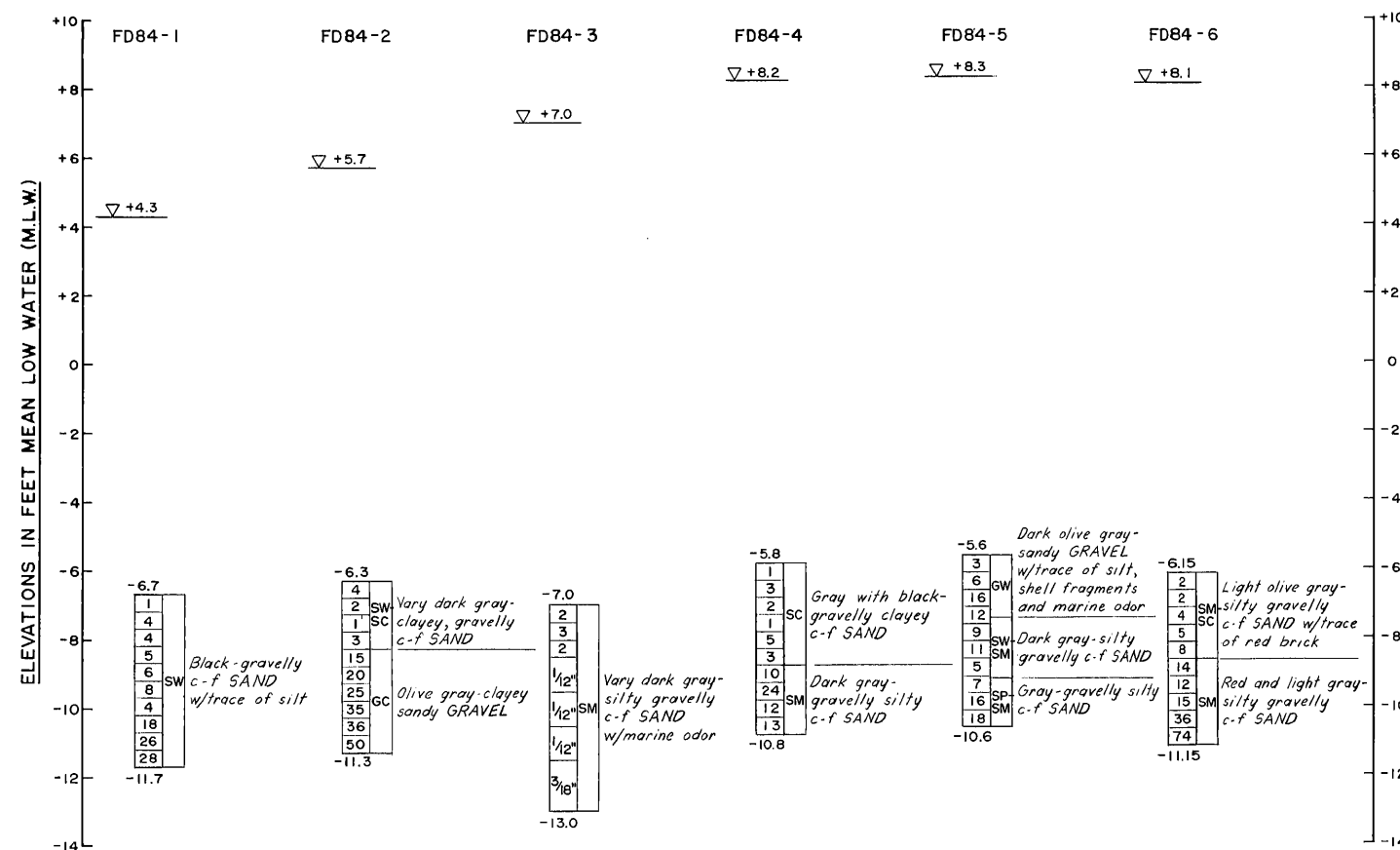
W WEIGHT OF TOOLS

3 BLOWS PER FOOT OF PENETRATION
USING 300 LB. HAMMER, 18" DROP
AND A-W SIZE DRILL ROD.

-8.5 ELEVATION AT BOTTOM OF PROBING (M.L.W.)

NOTES:

1. SUBSURFACE EXPLORATIONS, INCLUDING 11 MACHINE PROBINGS AND 27 DRIVE SAMPLE BORINGS WERE CONDUCTED IN MAY, 1984. A 12 x 16 FOOT WOODEN RAFT AND PORTABLE DRILL RIG WERE USED TO PERFORM EXPLORATIONS.
2. LOCATIONS FOR ALL EXPLORATIONS WERE SITED BY SURVEY OR SEXTANT.
3. DATUM USED FOR ALL EXPLORATIONS IS MEAN LOW WATER (M.L.W.). WHICH IS EQUAL TO -4.0 FEET N.G.V.D.
4. ALL MACHINE PROBINGS WERE DRIVEN USING A-W SIZE DRILL RODS AND A 300 LB. HAMMER WITH AN 18" DROP.
5. ALL DRIVE SAMPLE BORINGS WERE PERFORMED USING A 2 1/2" I.D. SOLID BARREL SAMPLER, CONTINUOUSLY SAMPLING AT 5-FOOT INTERVALS. THE SAMPLE WAS DRIVEN WITH A 300 LB. HAMMER AT AN 18" DROP.



GRAPHIC BORING LOGS

SCALE: 1" = 2.0 FT.

LEGEND GRAPHIC BORING LOGS

FD84-3 SAMPLE BORING NUMBER

▽ +3.5 WATER LEVEL ELEVATION

-7.0 ELEVATION OF GROUND SURFACE
AT TOP OF BORING (M.L.W.)

W WEIGHT OF TOOLS

10 BLOWS PER 6-INCH OF PENETRATION
USING A 300 LB. HAMMER, 18" DROP
AND 2 1/2" I.D. 5-FOOT LONG SOLID
BARREL SAMPLE.

SM SOIL CLASSIFICATION
(UNIFIED SOIL CLASSIFICATION SYSTEM)

BR BEDROCK

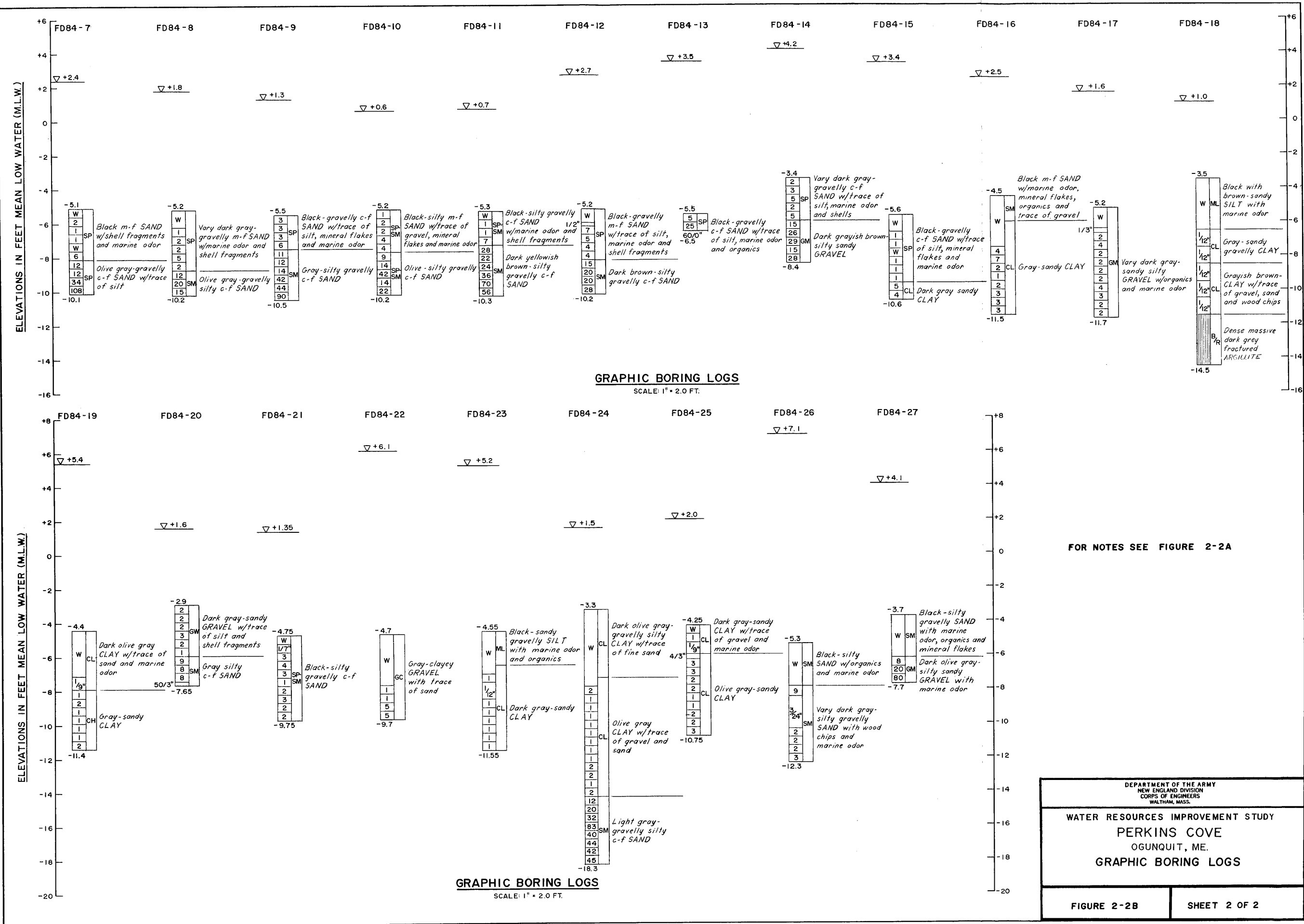
-17.0 ELEVATION AT BOTTOM OF BORING

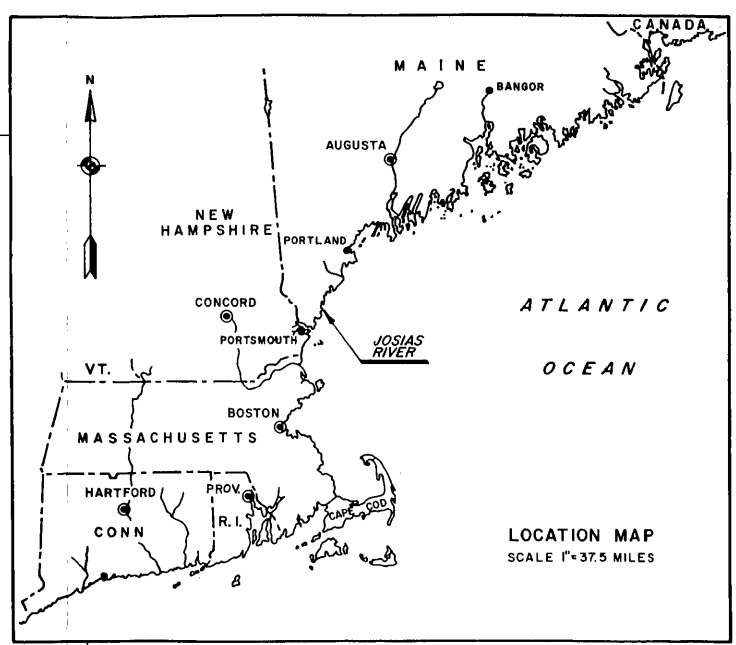
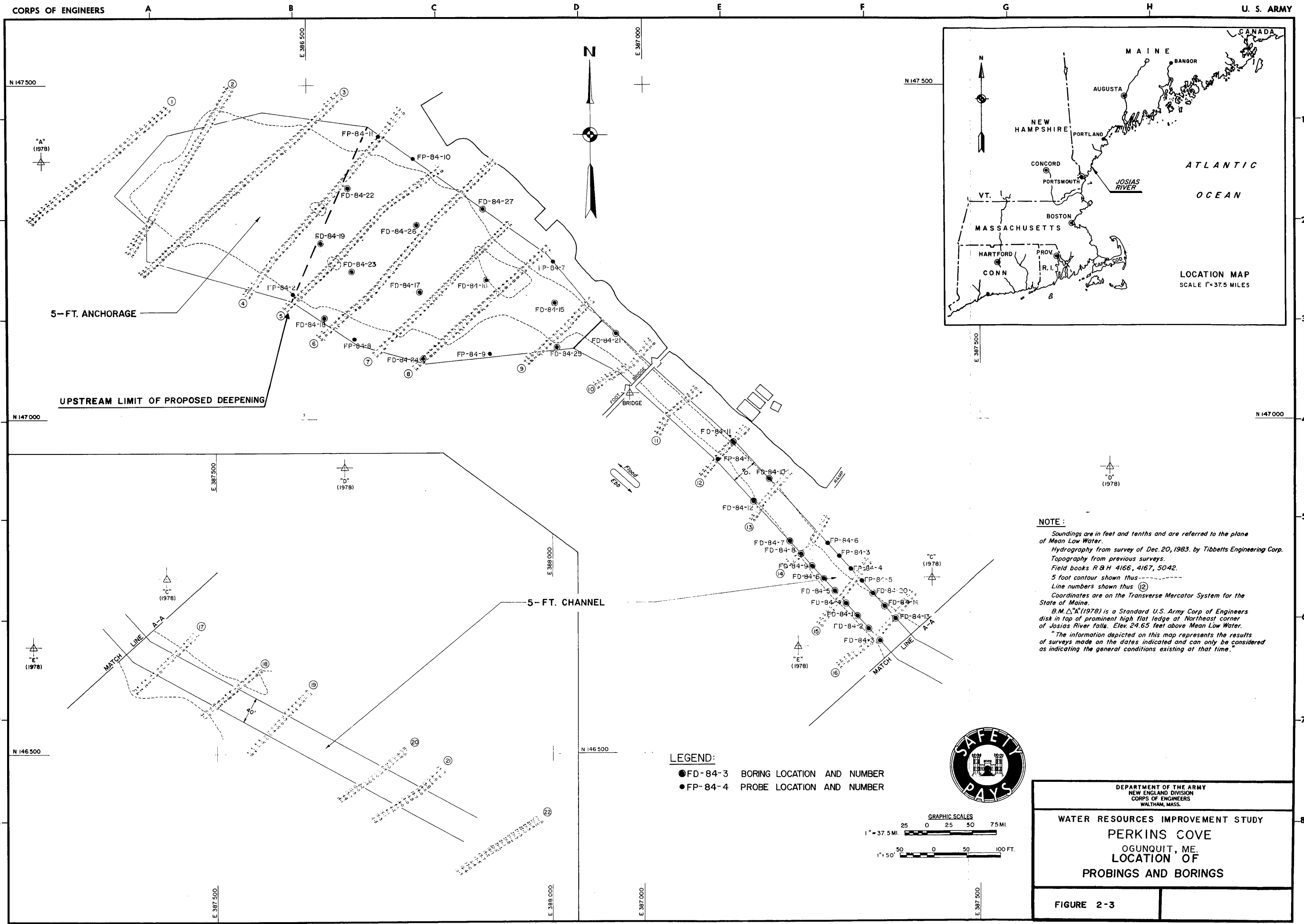
DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

WATER RESOURCES IMPROVEMENT STUDY
PERKINS COVE
OGUNQUIT, ME.
GRAPHIC MACHINE PROBING AND
BORING LOGS

FIGURE 2-2A

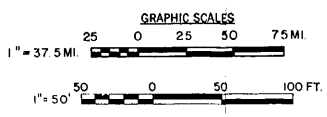
SHEET 1 OF 2





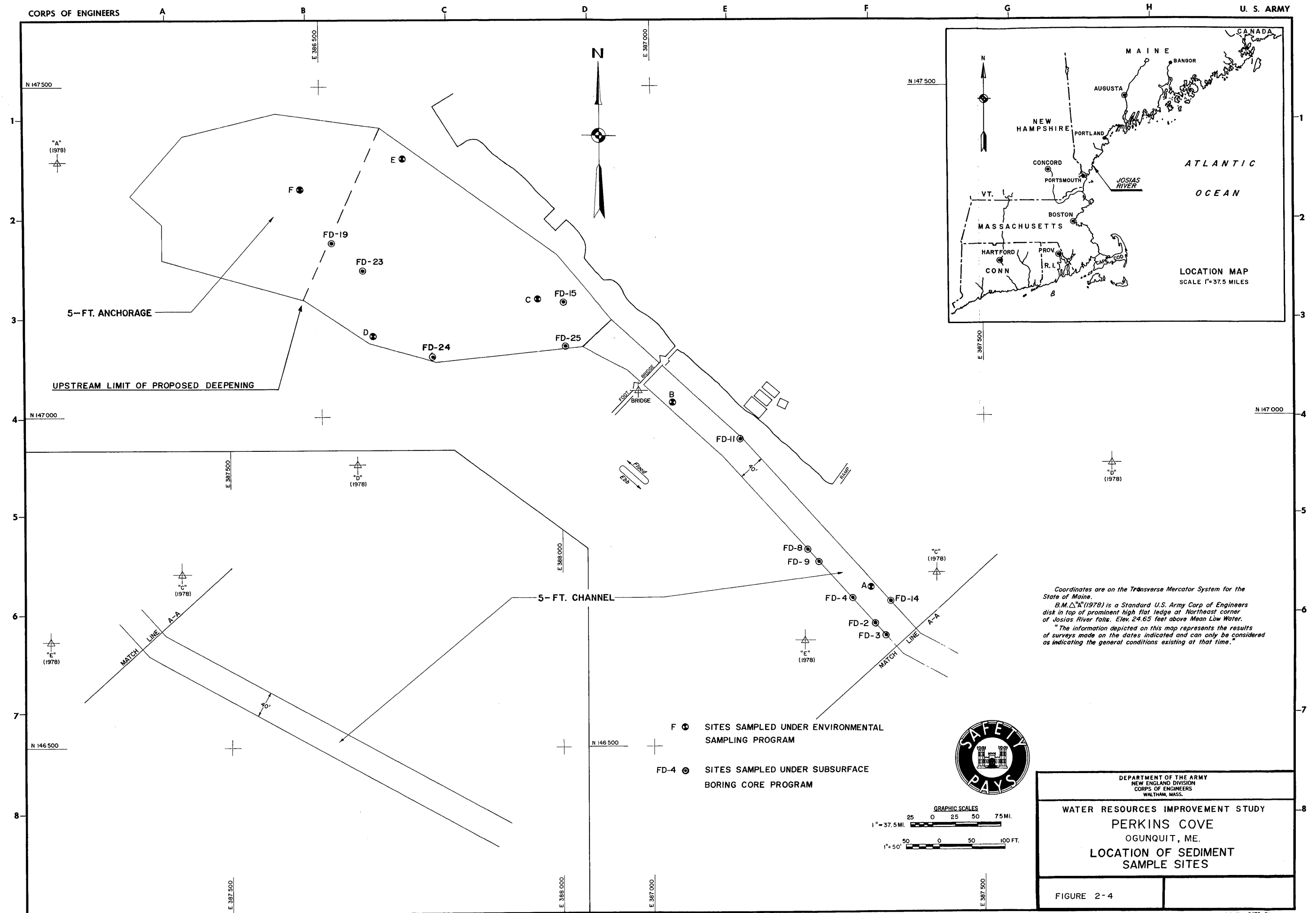
NOTE:
Soundings are in feet and tenths and are referred to the plane of Mean Low Water.
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Topography from previous surveys.
Field books R & H 4166, 4167, 5042.
5 foot contour shown thus: ---
Line numbers shown thus: ②
Coordinates are on the Transverse Mercator System for the State of Maine.
B.M. Δ (1978) is a Standard U.S. Army Corp of Engineers disk in top of prominent high flat ledge at Northeast corner of Josias River falls. Elev. 24.65 feet above Mean Low Water.
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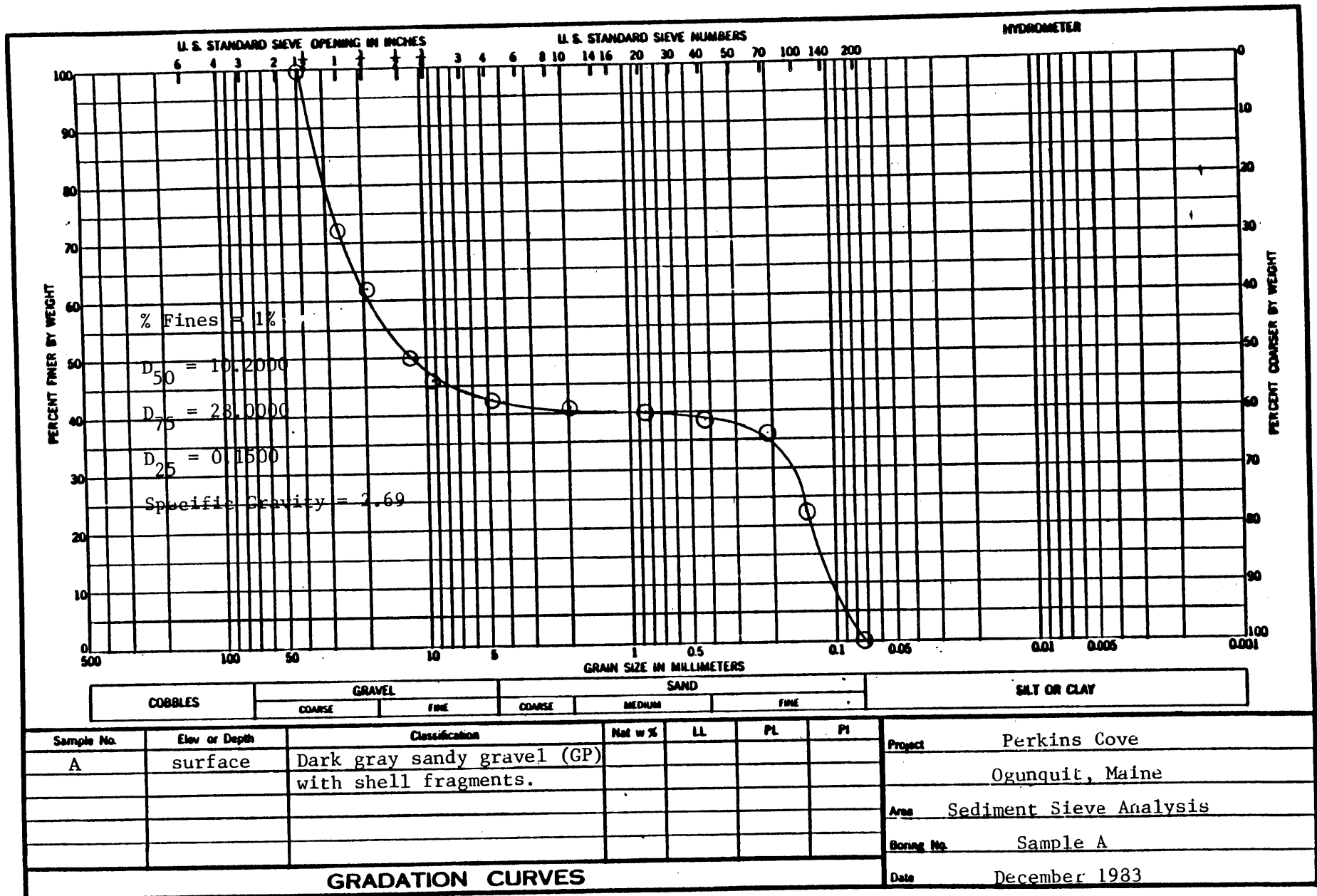
LEGEND:
● FD-84-3 BORING LOCATION AND NUMBER
● FP-84-4 PROBE LOCATION AND NUMBER

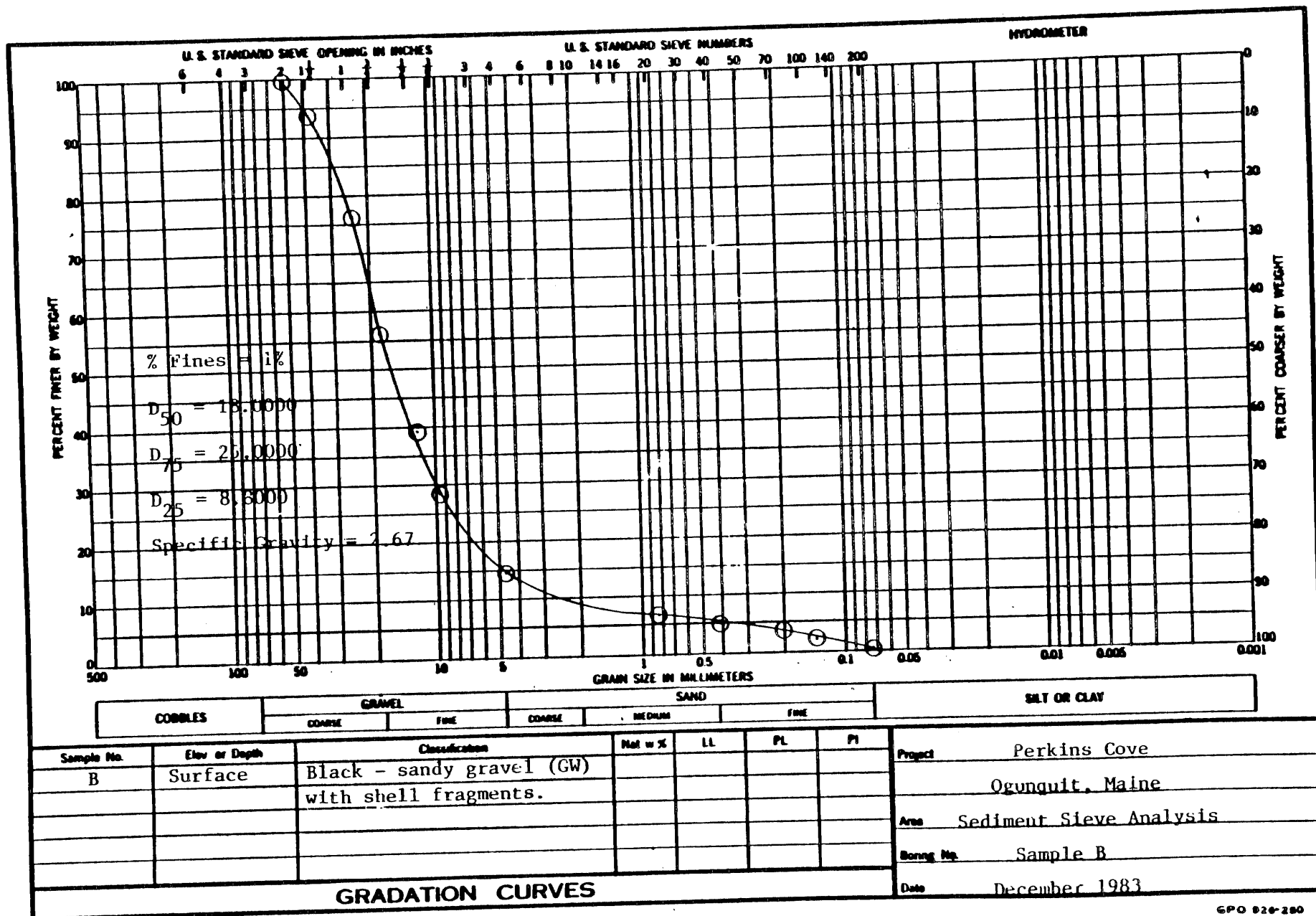


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PROBINGS AND BORINGS

FIGURE 2-3



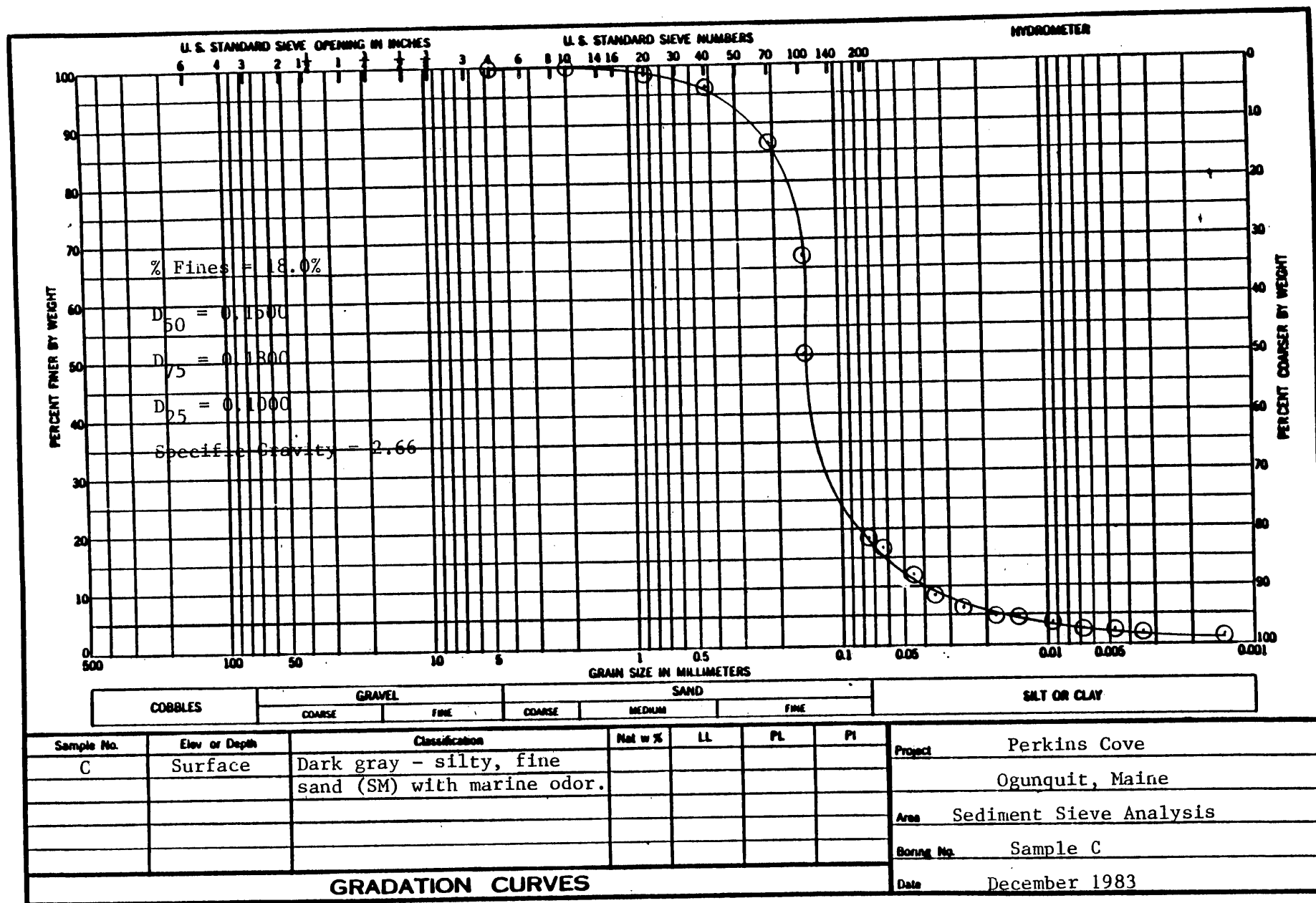


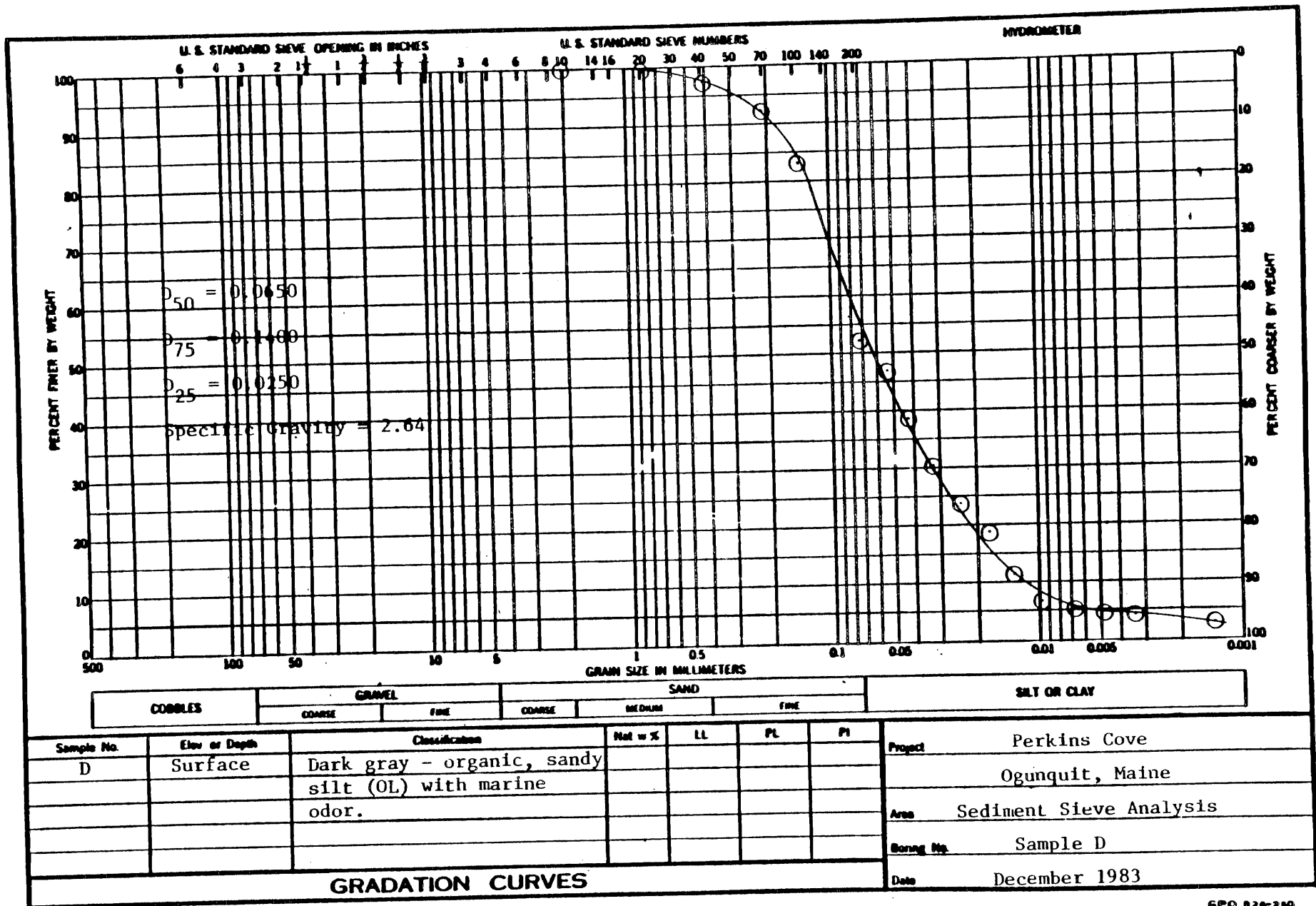


GPO 928-280

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MAY 63

FIGURE 2-5B

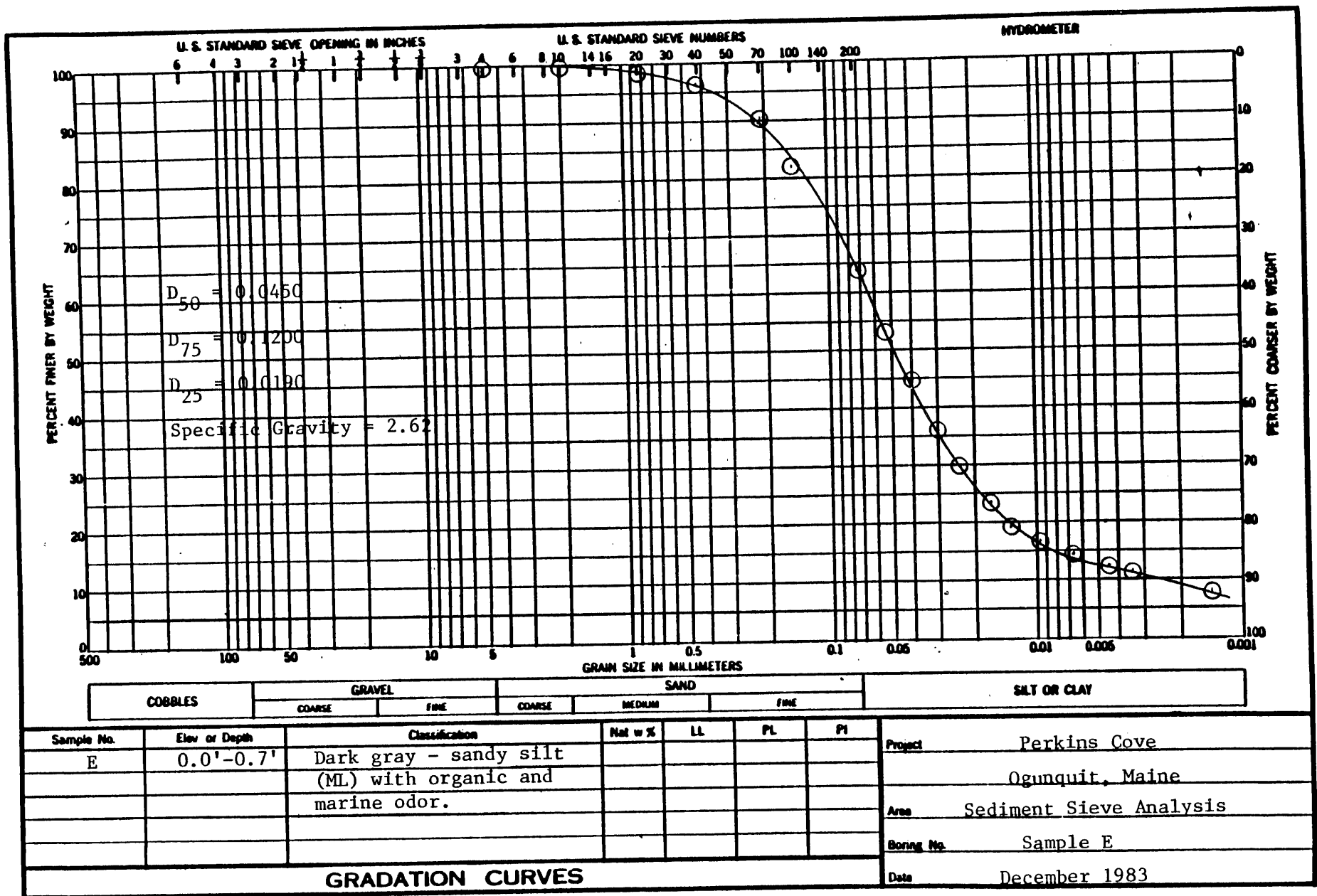


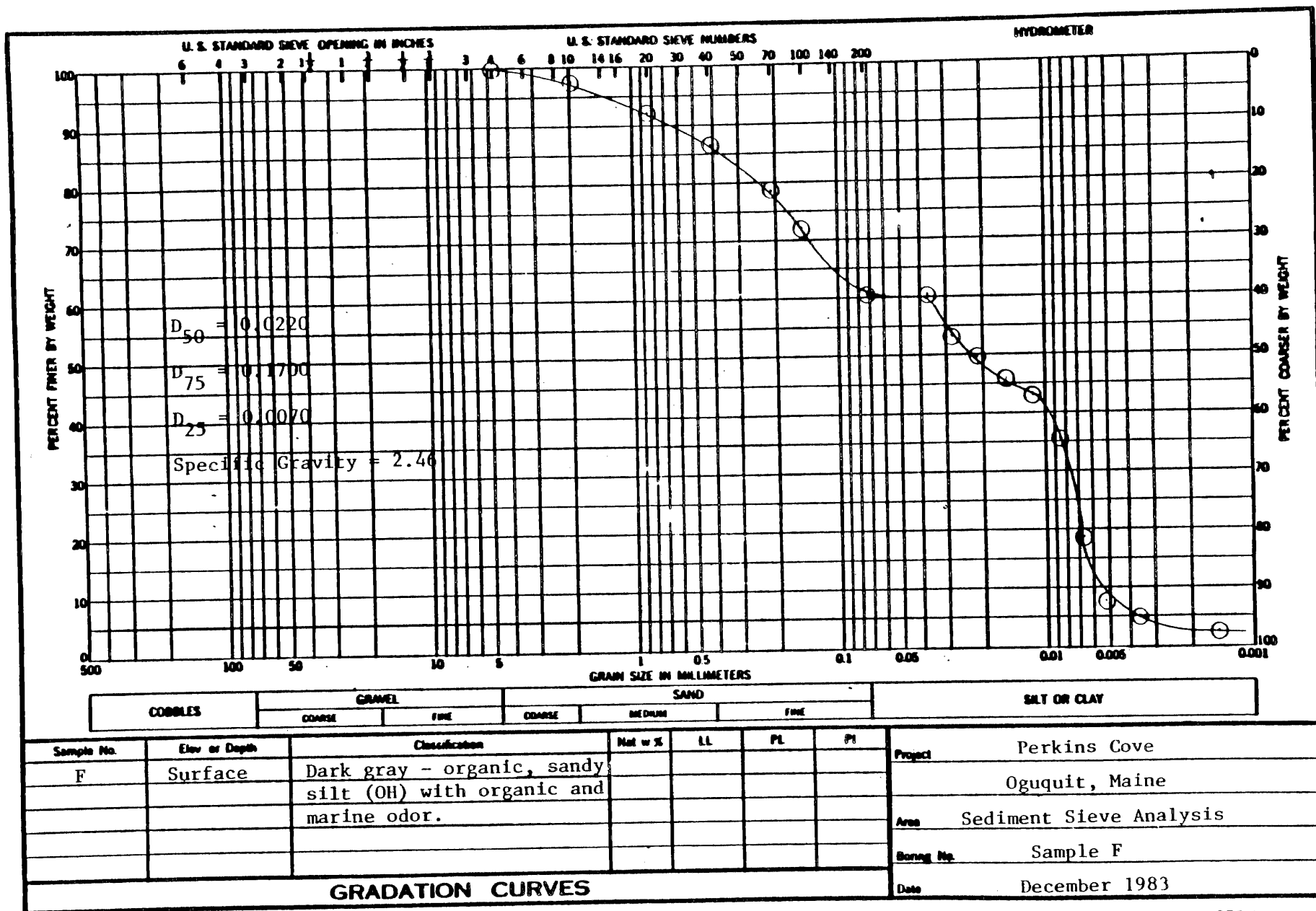


GPO 820-280

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FIGURE 2-5D

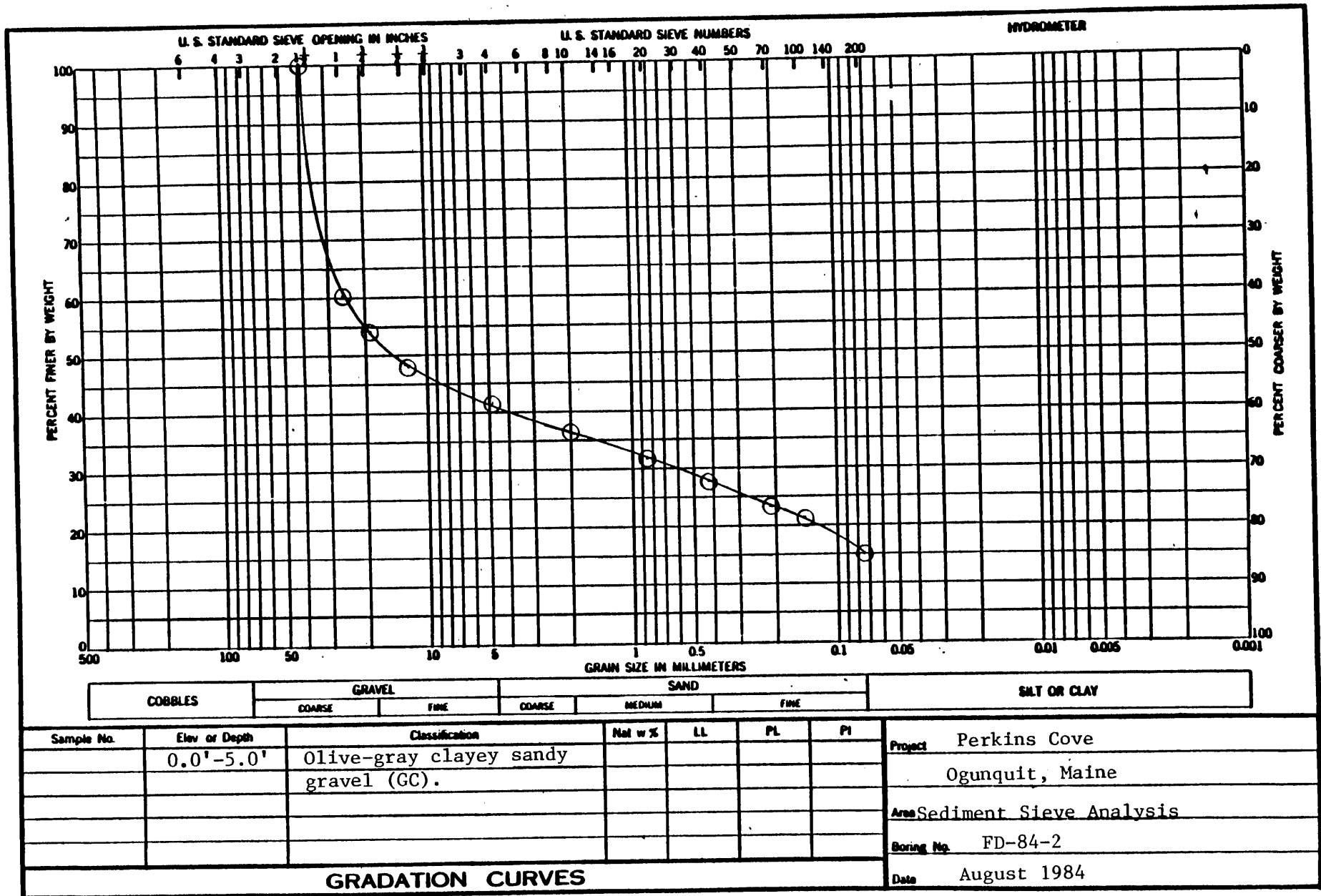


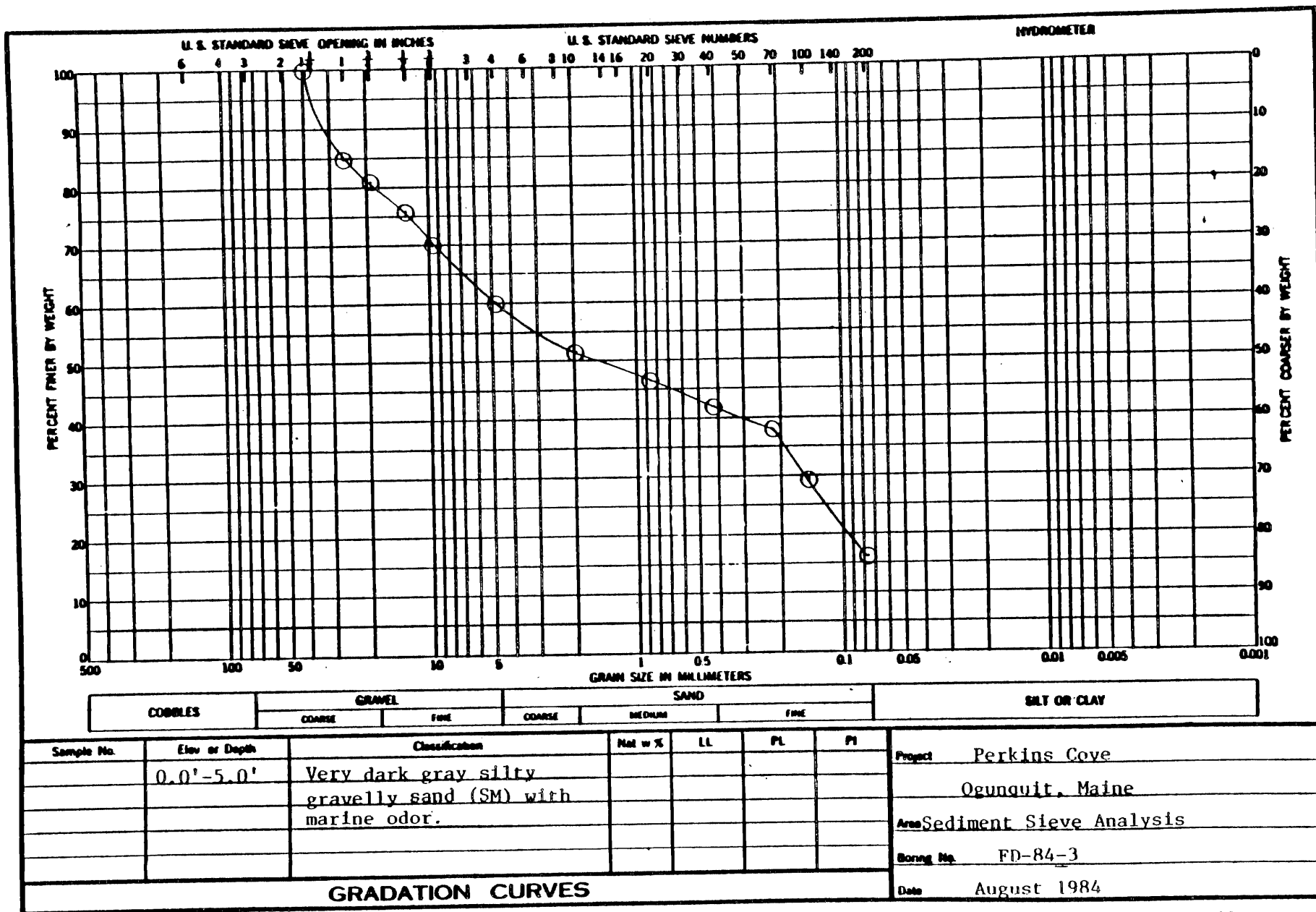


GPO 926-260

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1 MAY 63

FIGURE 2-5F

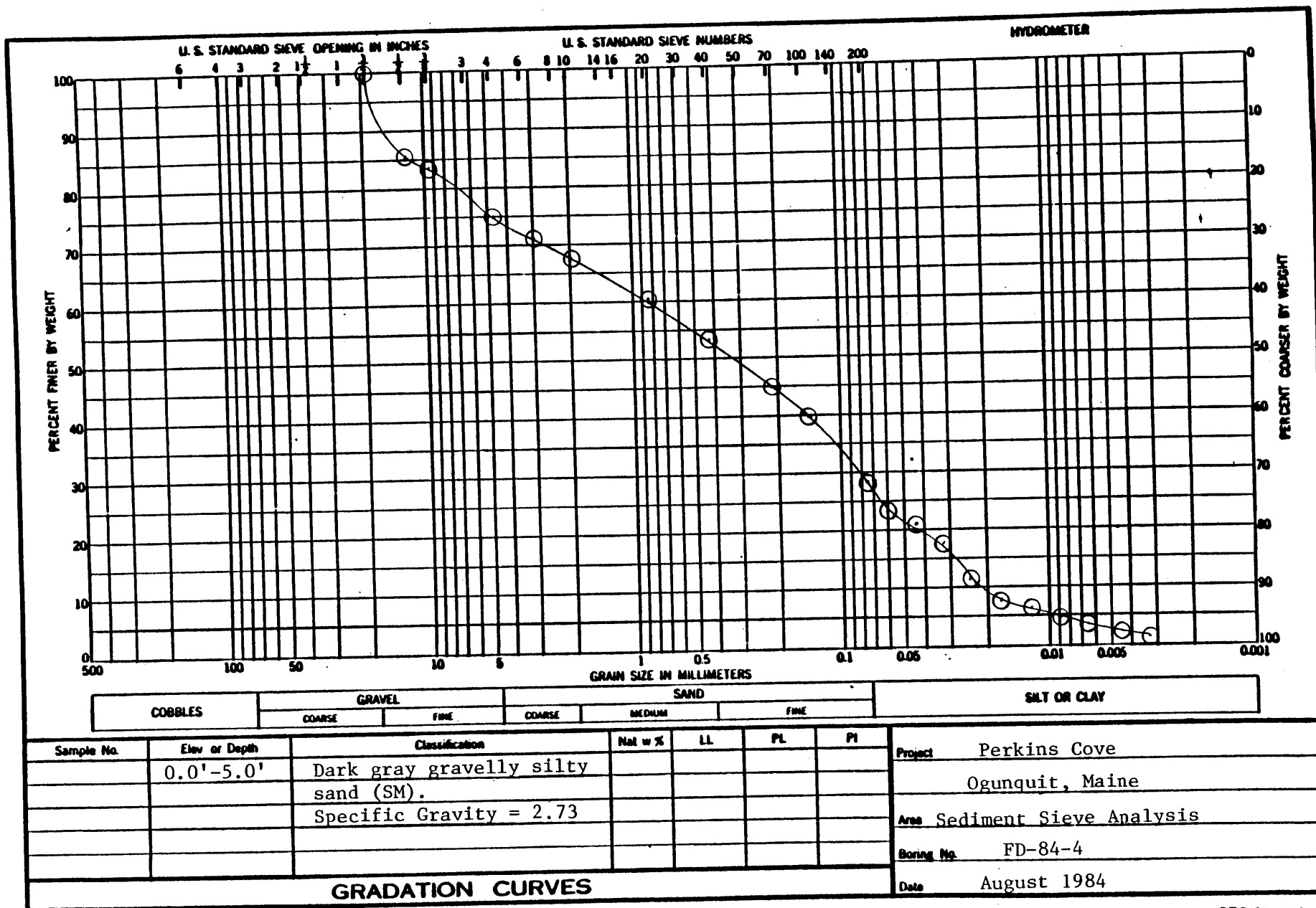




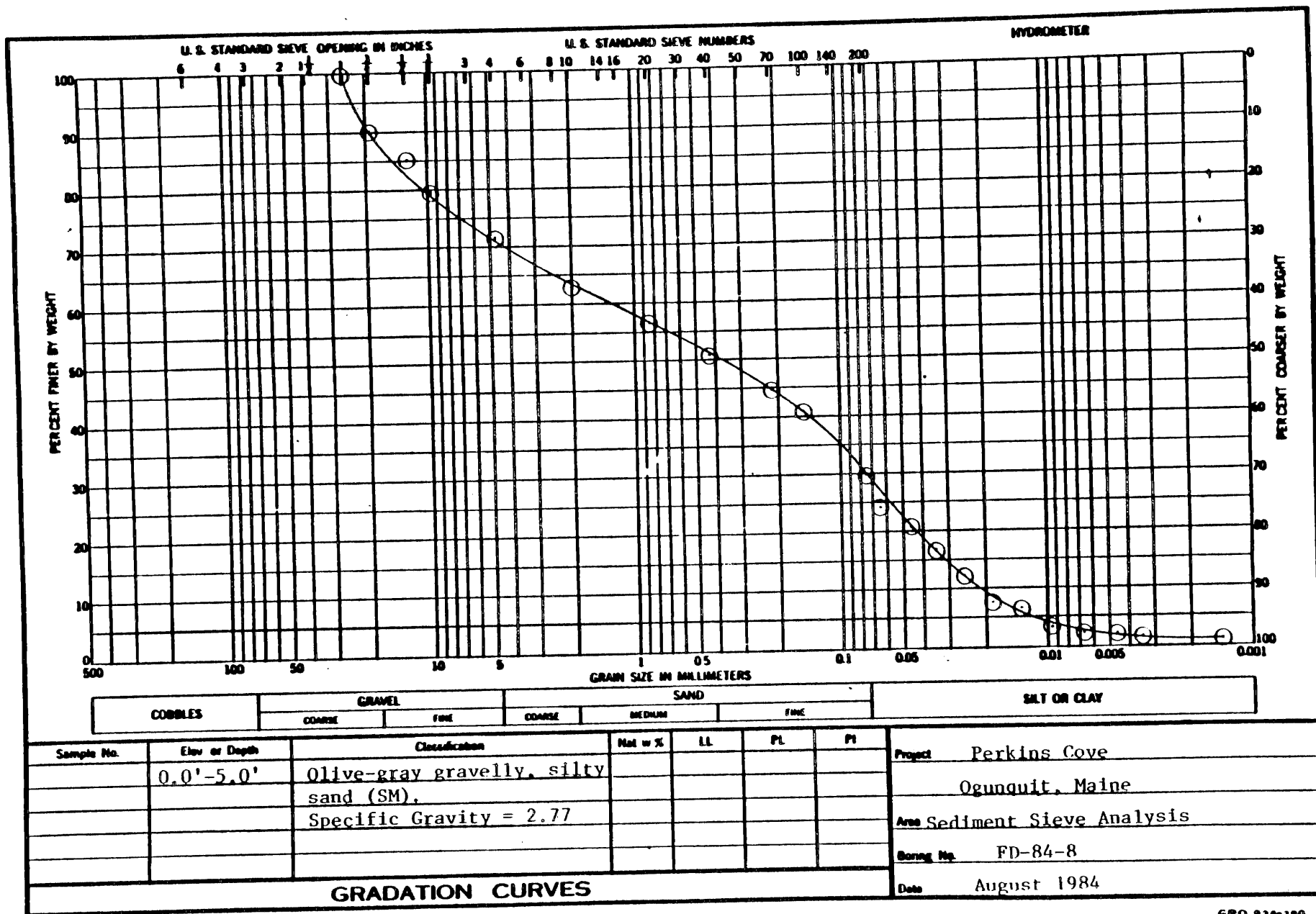
GPO 926-280

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FIGURE 2-6B



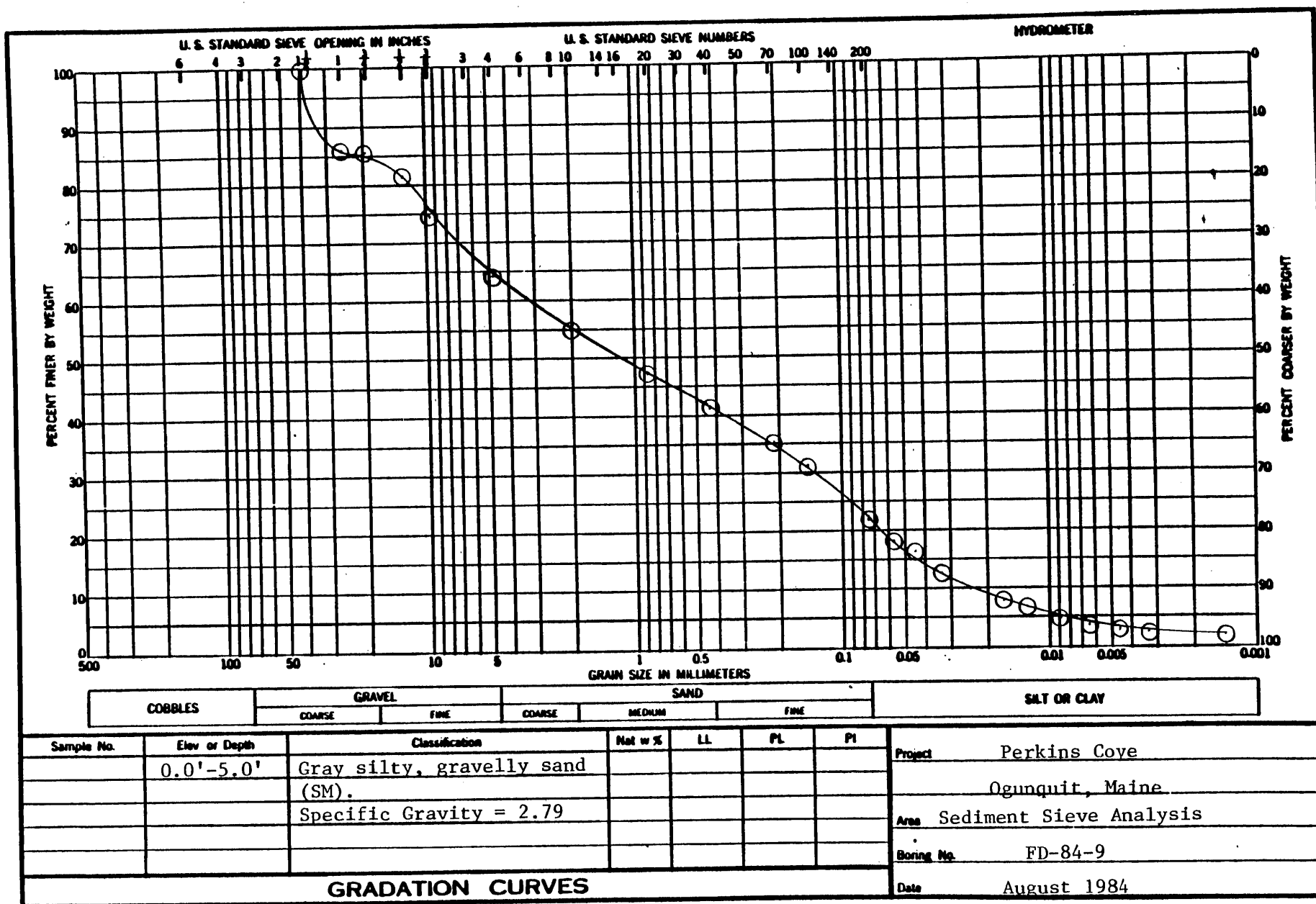
GPO 926-200



GPO 920-180

ENG FORM 2087
MAY 68

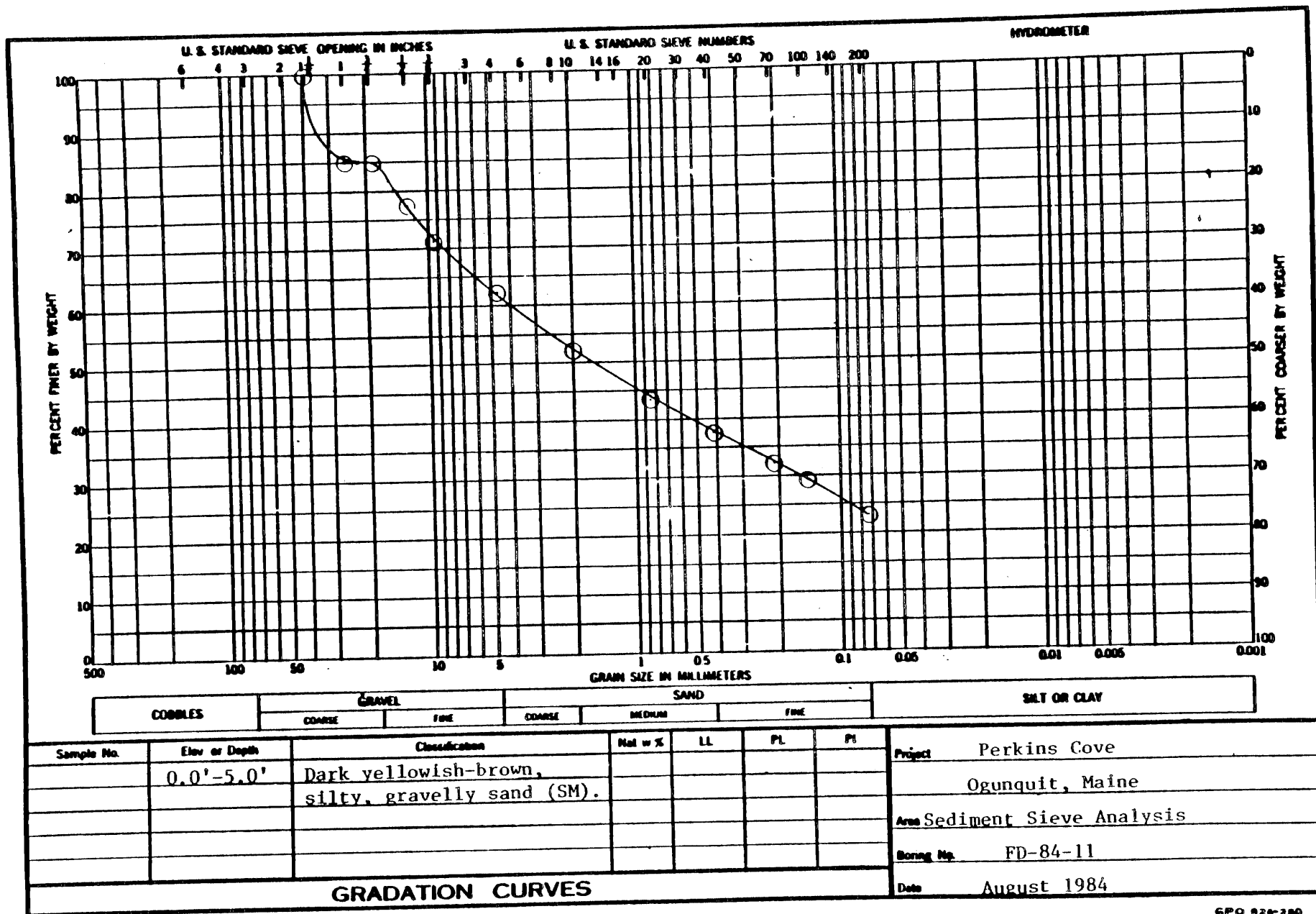
FIGURE 2-6D



ENG FORM 2087
MAY 63

GPO 920-210

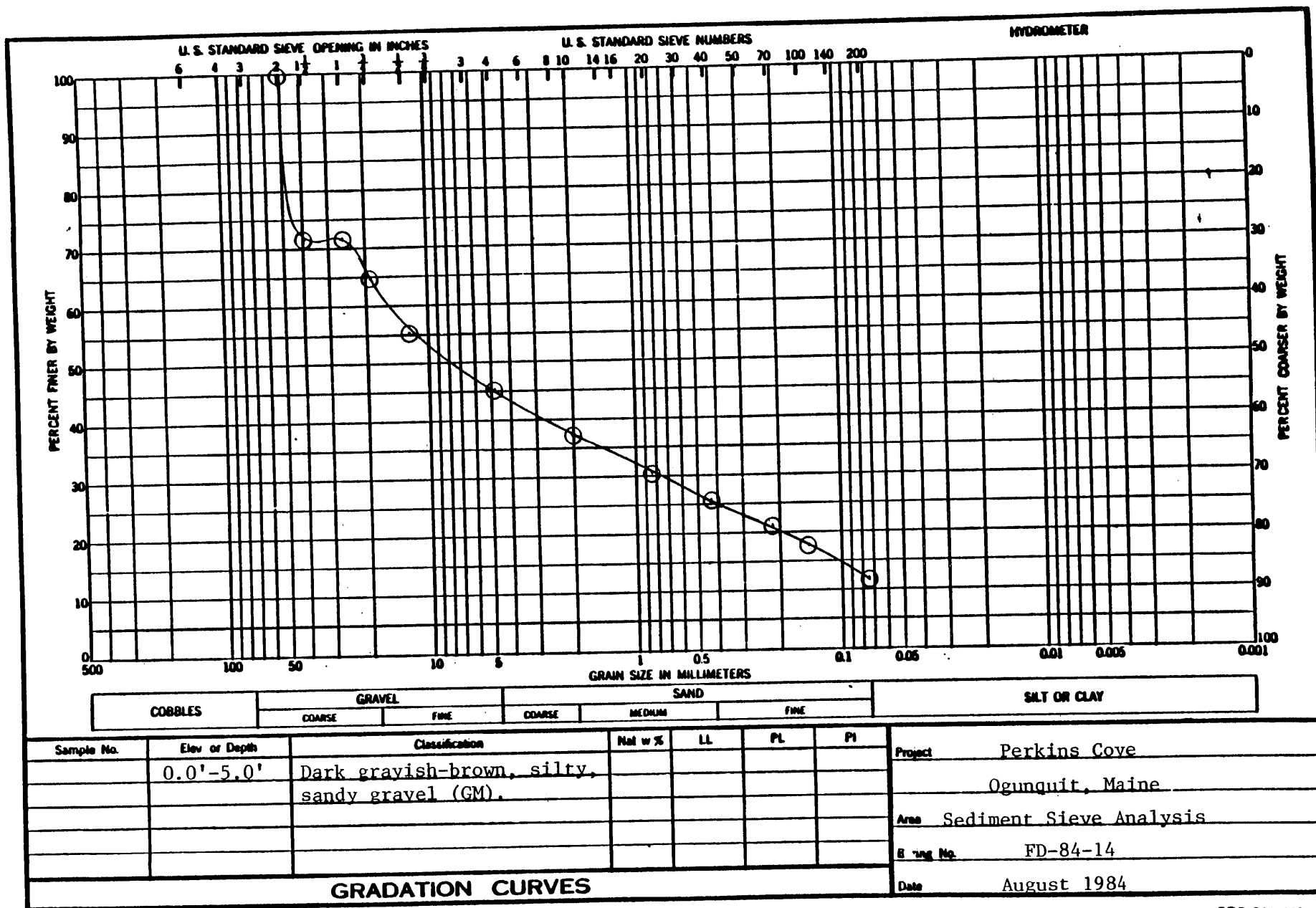
FIGURE 2-6E

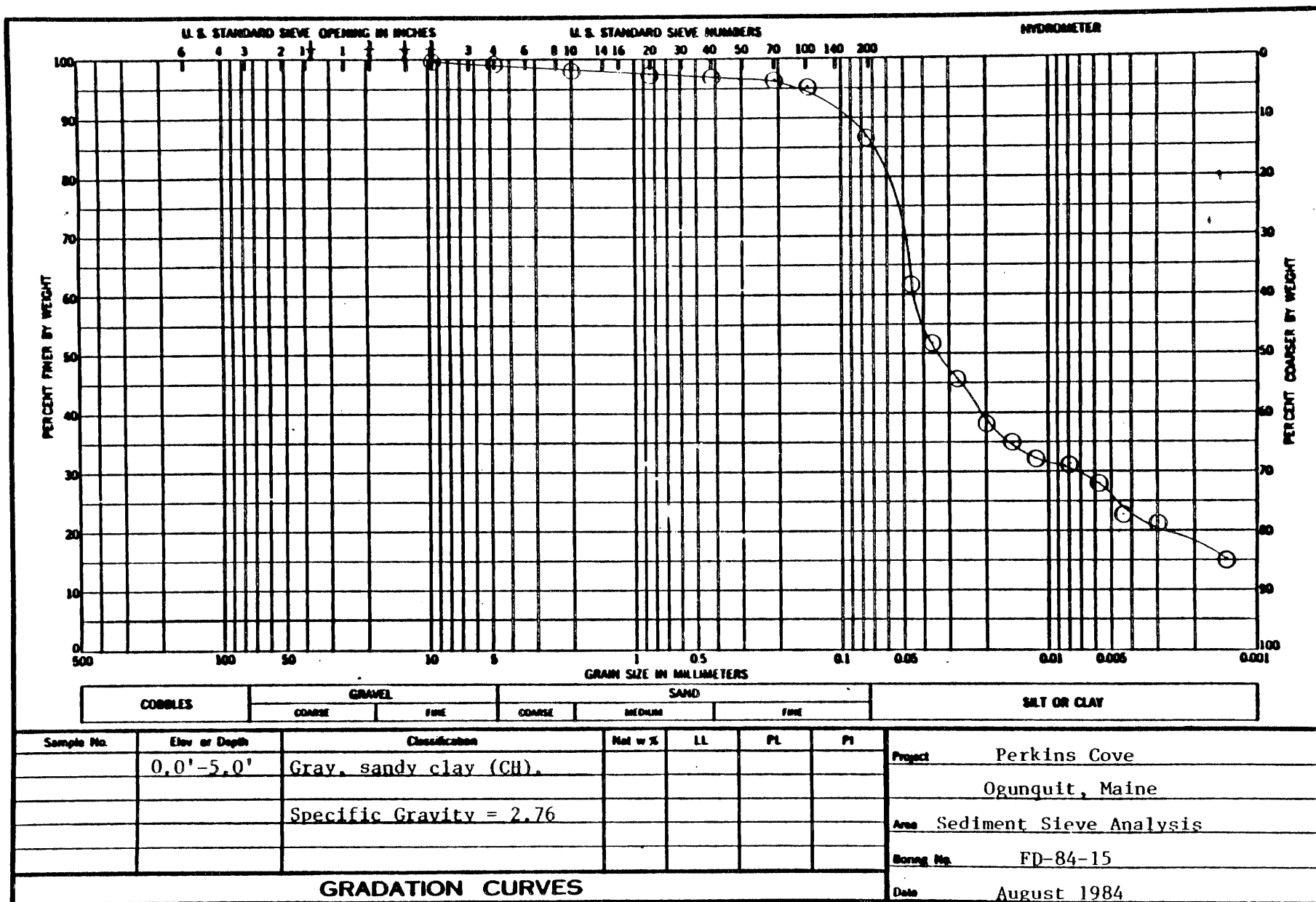


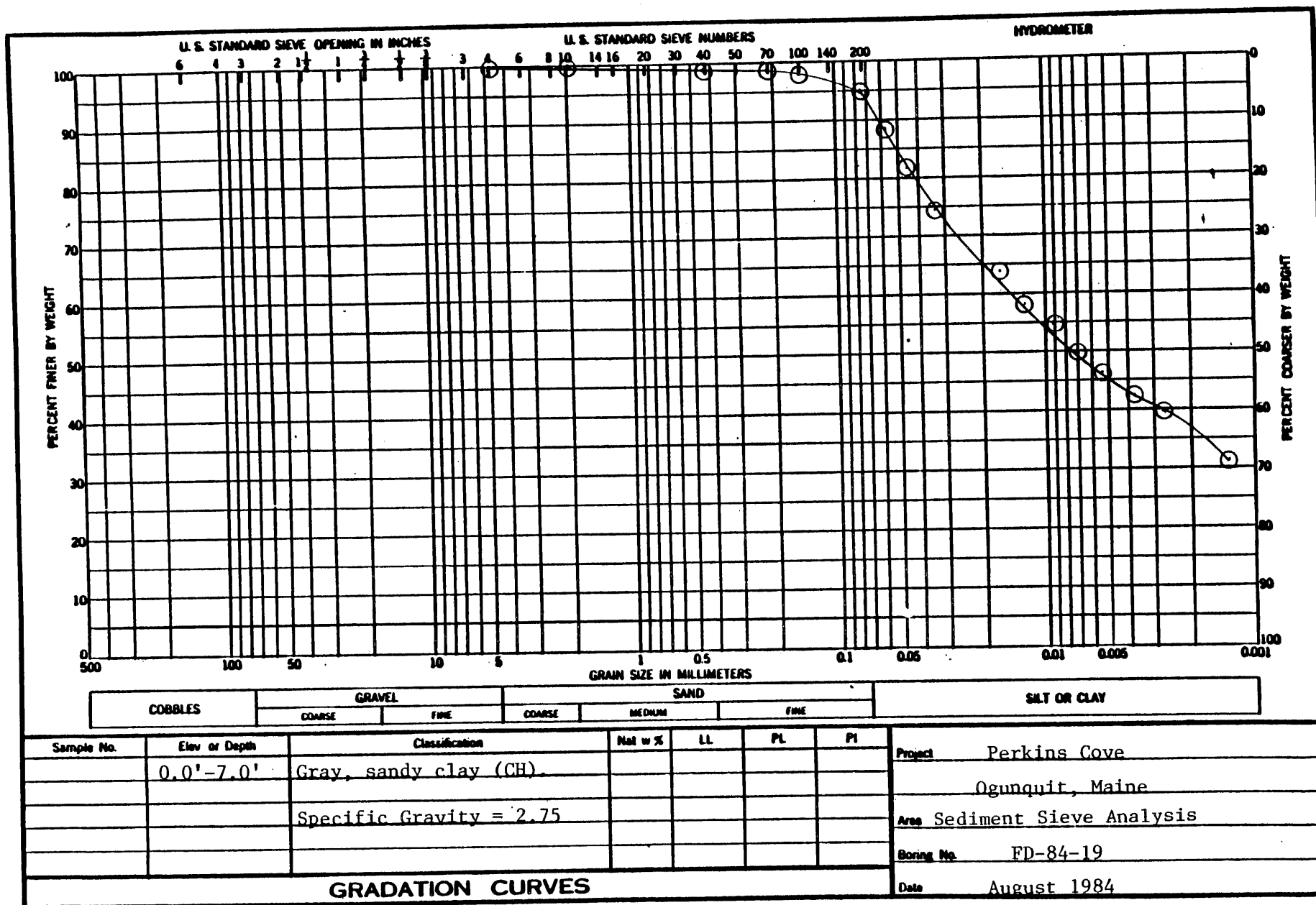
GPO 920-280

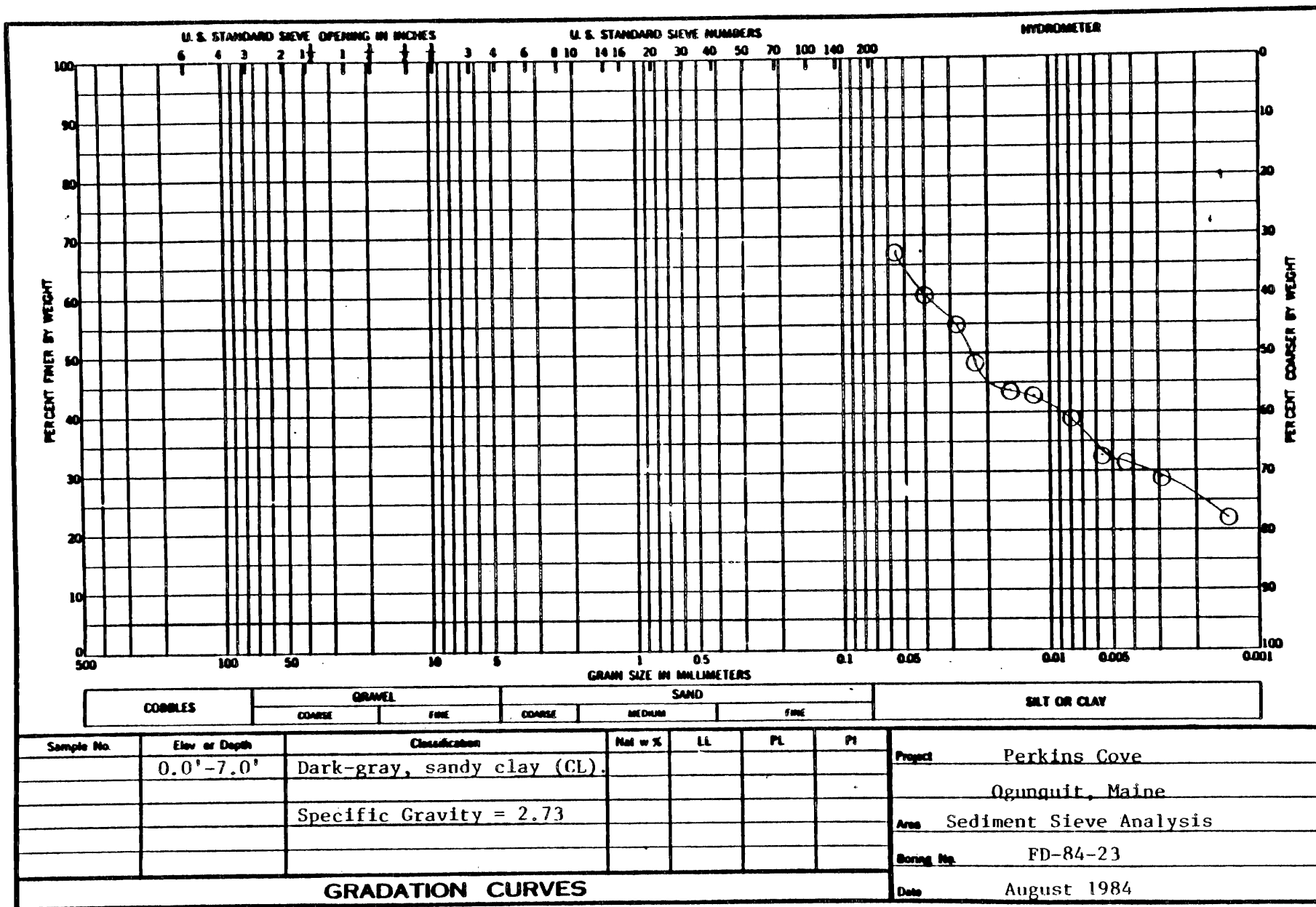
ENG FORM 2087
MAY 68

FIGURE 2-6F





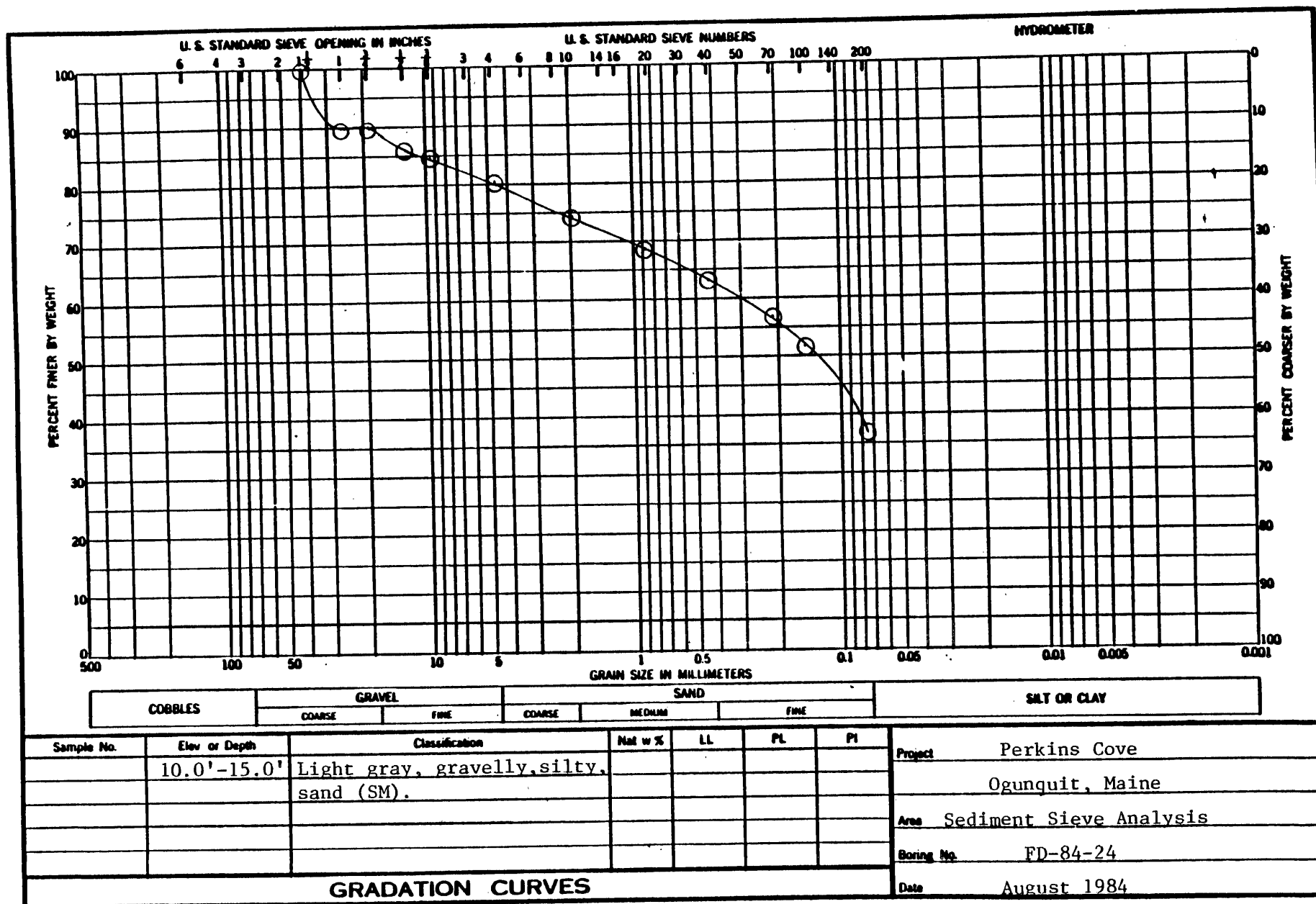


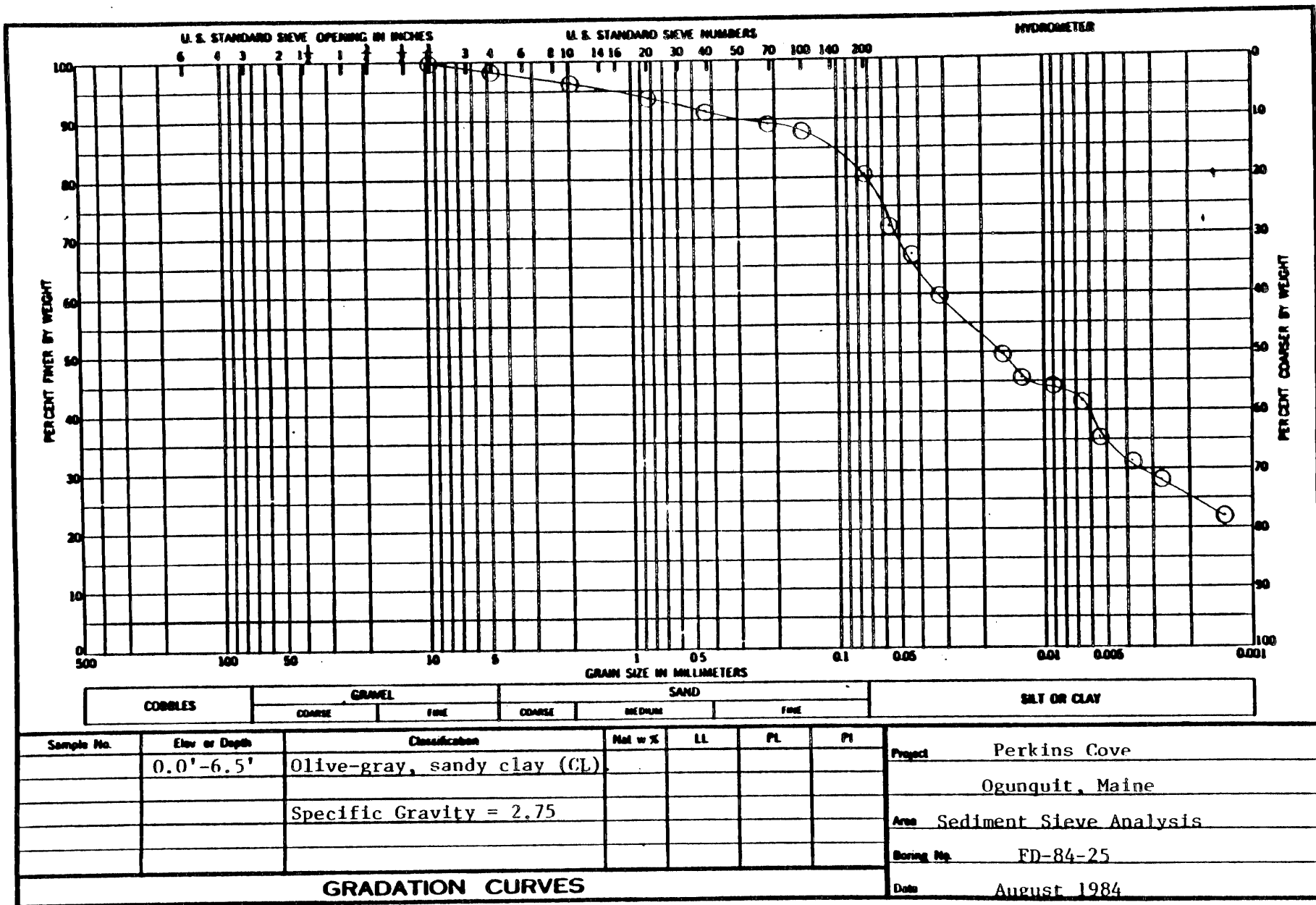


GPO 520-280

ENG FORM 2087
MAY 63

FIGURE 2-6J

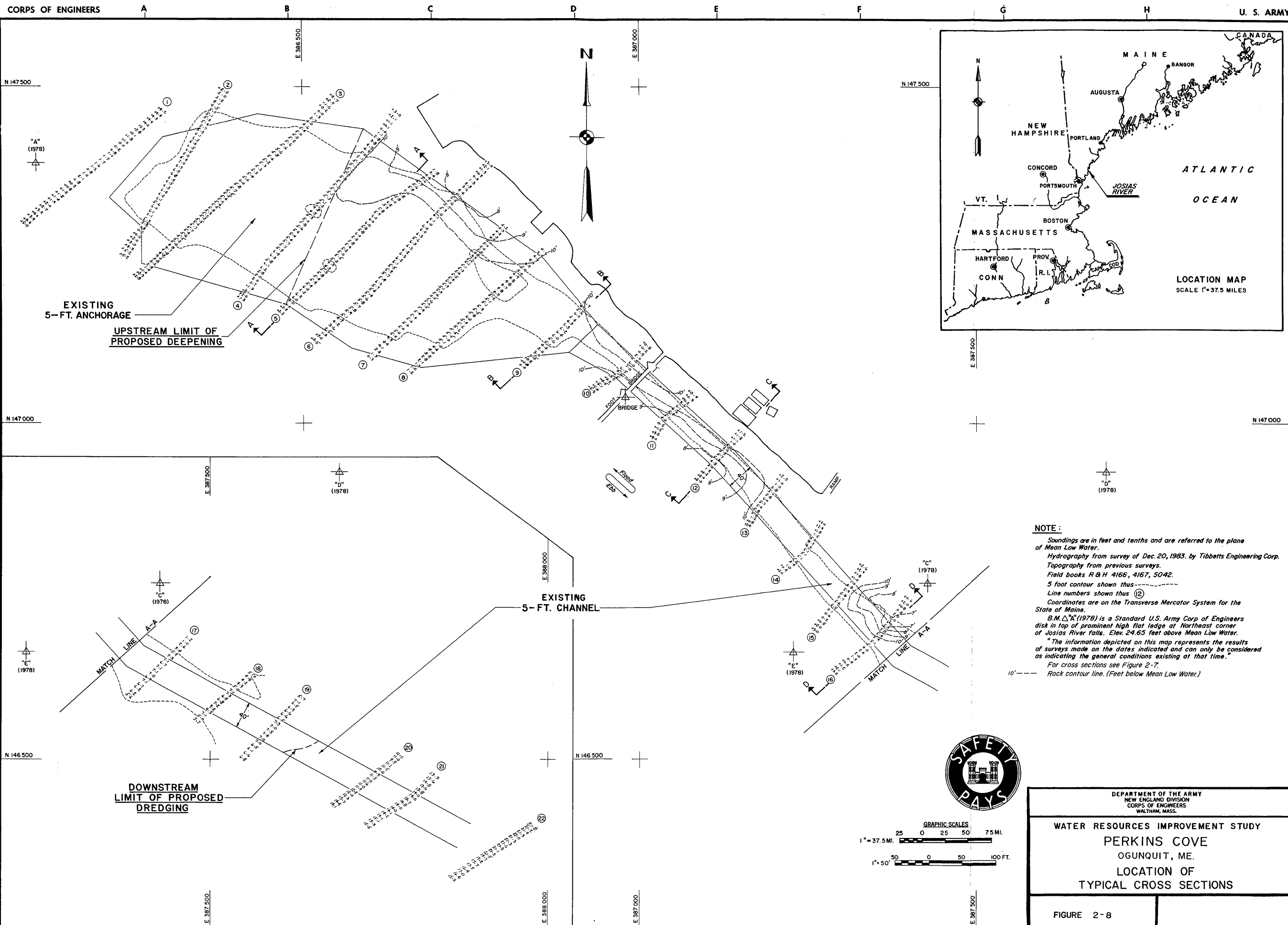




ENG FORM 2087
1 MAY 83

GPO 920-280

FIGURE 2-6L



NOTE :

Soundings are in feet and tenths and are referred to the plane of Mean Low Water.

Hydrography from survey of Dec. 20, 1983, by Tibbitts Engineering Corp.

Topography from previous surveys.

Field books R & H 4166, 4167, 5042.

5 foot contour shown thus: ---

Line numbers shown thus: (12)

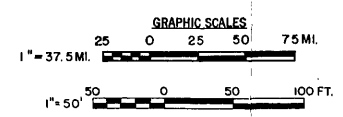
Coordinates are on the Transverse Mercator System for the State of Maine.

B.M. Δ "A" (1978) is a Standard U.S. Army Corp of Engineers disk in top of prominent high flat ledge at Northeast corner of Josias River Falls. Elev. 24.65 feet above Mean Low Water.

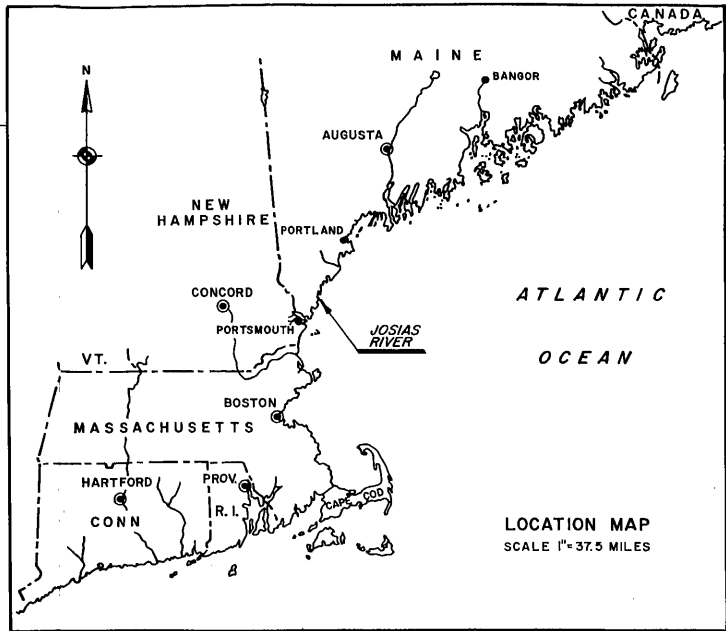
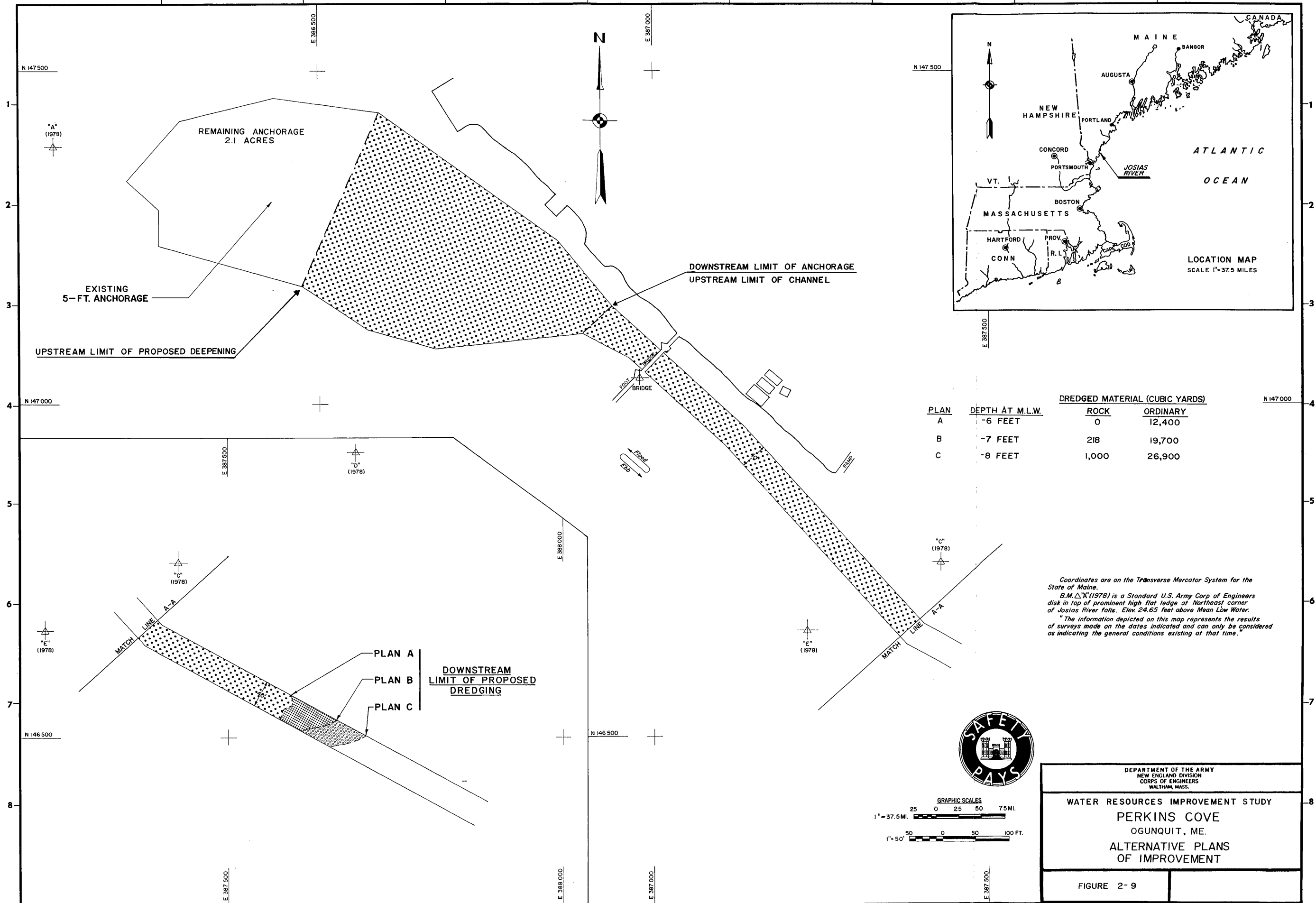
"The information depicted on this map represents the results of surveys made on the dates indicated and can only be considered as indicating the general conditions existing at that time."

For cross sections see Figure 2-7.

10' --- Rock contour line. (Feet below Mean Low Water.)

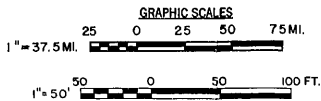


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LOCATION OF TYPICAL CROSS SECTIONS	
FIGURE 2-8	



PLAN	DEPTH AT M.L.W.	DREDGED MATERIAL (CUBIC YARDS)	
		ROCK	ORDINARY
A	-6 FEET	0	12,400
B	-7 FEET	218	19,700
C	-8 FEET	1,000	26,900

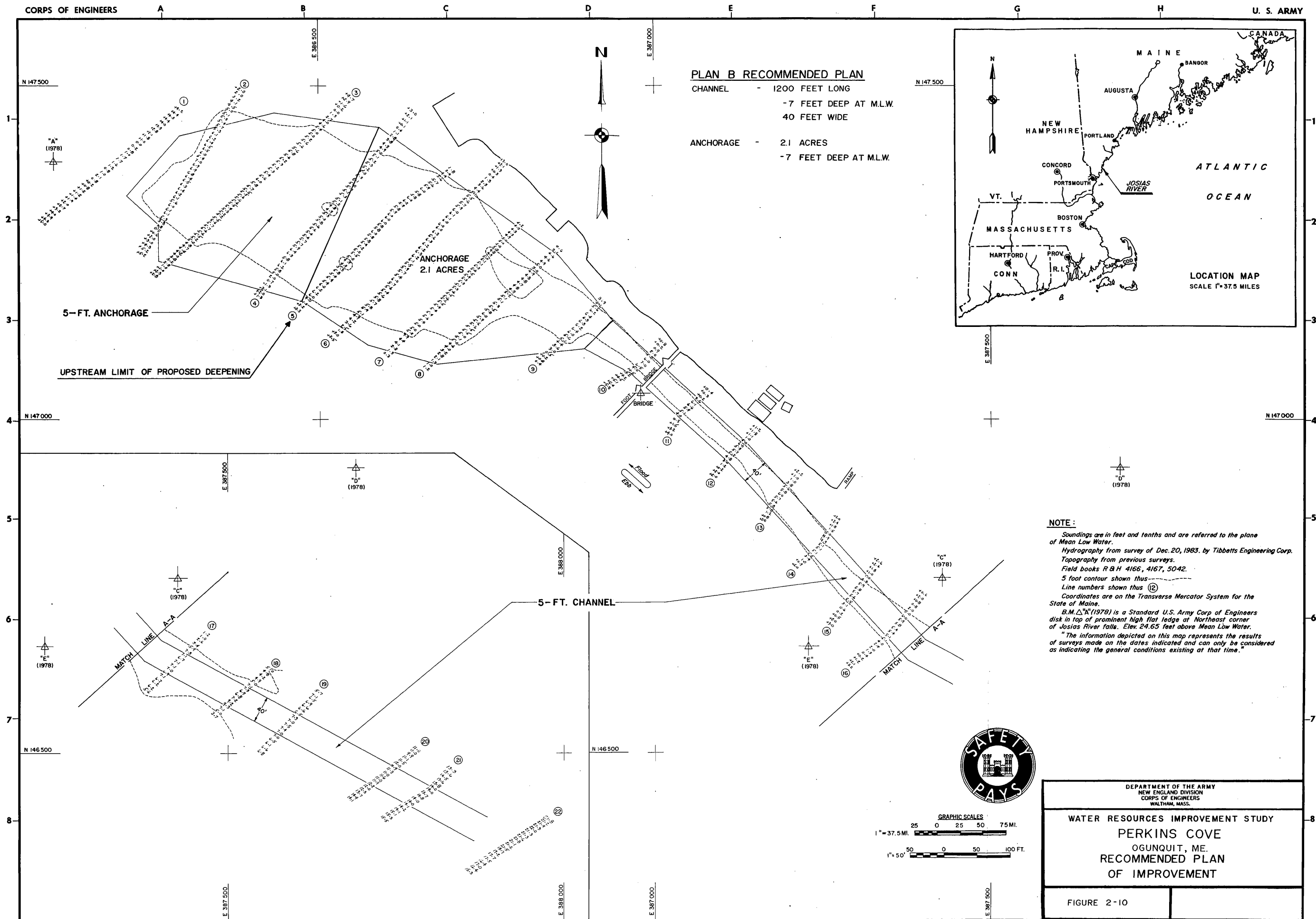
Coordinates are on the Transverse Mercator System for the State of Maine.
B.M. "A" (1978) is a Standard U.S. Army Corp of Engineers disk in top of prominent high flat ledge at Northeast corner of Josias River falls. Elev. 24.65 feet above Mean Low Water.
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ALTERNATIVE PLANS
OF IMPROVEMENT

FIGURE 2-9



APPENDIX 3

ECONOMIC AND SOCIAL ANALYSIS

APPENDIX 3

ECONOMIC AND SOCIAL ANALYSIS

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APPENDIX 3

SECTION A

ECONOMICS ASSESSMENT

SECTION A
PERKINS COVE, OGUNQUIT, MAINE
ECONOMICS ASSESSMENT
INTRODUCTION

Methodology

The purpose of this appendix is to present the economic benefits resulting from proposed improvements in Perkins Cove. Benefits are for commercial fishing and recreation. Commercial benefits are defined in the Principles and Guidelines as increases in net income to fishermen. Net increases may result due to cost savings in harvesting the existing catch or change in total revenue due to increased catch minus the change in total cost due to harvesting the increased catch. Both sources of increases in fishermen's net income are addressed in this appendix. Recreation benefit is defined as the increase in recreation value with the project.

All benefits and costs are at an June 1987 price level. Benefits and costs are converted to an average annual equivalent basis using the Federal interest rate of 8-5/8%. This rate, as specified in the Federal Register is to be used by Federal agencies in the formulation and evaluation of water and related land resource plans for the period October 1, 1986 through and including September 30, 1987.

Project Area

Perkins Cove is located in Ogunquit, which is about 18 miles north of Kittery, Maine, and Portsmouth, New Hampshire, and about 28 miles south of Portland, Maine. Ogunquit is a resort town with a permanent population of 1,492 (1980) and a summer population of over 10,000.

"Perkins Cove is one of the smallest, most crowded harbors on the entire coast of Maine. The entire anchorage area is perhaps only 300 yards long and about 100 yards wide. It is entered by a very narrow channel about one-fourth of a mile from open ocean. The entrance to the harbor is crossed by a footbridge, with a clearance of 16 feet and a channel width of 40 feet. The channel itself makes it impossible for large boats to enter the harbor. In the harbor there are spaces for approximately 70 boats. There are spaces for 36 small boats on a series of wharfs maintained by the town at the back of the harbor and approximately 30 moorings in the harbor itself. There are no more moorings available at present. Mooring spaces are allocated by the town harbor-master. When moorings become available commercial fishing vessels get first preference. A relatively high mooring fee is charged by the town. Fishermen use the town dock on the west side of the harbor which has a small hoist, a shed for bait barrels, and tanks for fuel."¹

¹The Fishing - Ports of Maine and New Hampshire; 1978, Maine Sea Grant Publications, 1980.

The existing anchorage is 4.2 acres with a depth of 5 feet at mean low water (MLW). The access channel is also 5 feet deep and 40 feet wide.

Perkins Cove is used by both recreational and commercial vessels. Based on information supplied by local officials there are approximately 25 commercial fishing vessels, 9 charter fishing vessels, and 49 recreational vessels which use the harbor. Additionally, many transient vessels use the harbor each year. The project area has a tidal range of 9.7 feet.

Problem

Local fishermen have expressed an interest in deepening the access channel and anchorage area. Inadequate depth at low tide has resulted in tidal delays to fishermen leaving and entering the harbor. Fishermen are also experiencing grounding damage while underway in the main channel and in the anchorage area. The current depth of the access channel and anchorage area has prohibited the use of larger fishing vessels with deeper drafts. Many of the local fishermen feel that they could increase their profitability through the use of larger vessels.

WITHOUT-PROJECT CONDITION

Species Harvesting

Currently, Perkins Cove fishermen harvest primarily lobster and some groundfish. Most of the lobster boats fish within 10 miles of port and the draggers range up to 25 miles from port. Landings data at the port level area is not generally available in Maine. In addition, even if available, all of the lobster catch is not landed in Ogunquit by the fleet. Some is sold to dealers in Portland and Portsmouth, N.H. As a result, landings data for York County, which includes Ogunquit, was used in this analysis. These data for the period 1974 to 1982 are presented in Table 3-1.

TABLE 3-1
LOBSTER LANDINGS
YORK COUNTY, MAINE
1974-1982

<u>Year</u>	<u>Pounds</u>	<u>Value</u>	<u>Price/Pound</u>
1974	1,080,500	\$1,552,057	\$1.44
1975	1,063,300	1,726,035	1.62
1976	995,000	1,459,674	1.53
1977	1,036,000	1,775,456	1.71
1978	970,800	1,695,778	1.75
1979	1,042,300	1,880,784	1.80
1980	1,313,500	2,482,535	1.89
1981	1,240,400	2,516,977	2.03
1982	1,143,600	2,549,391	2.23

Catch and effort data are displayed in Table 3-2 for the State of Maine. Between 1965 and 1983, landings increased from 18.9 million pounds to 22 million pounds, or approximately 16 percent. Over the same period effort, as measured by the number of traps, increased from 789,000 to 2,000,000, or approximately 153 percent. Thus, catch per unit of effort declined substantially over this period.

Regulation could affect the profitability of lobstering by limiting the number of trips. However, the lobster harvest is not measurably affected by regulation. There is a size restriction, but no limits on entry or effort.

TABLE 3-2
SUMMARY OF THE MAINE LOBSTER FISHERY
1965-1984

<u>Year</u>	<u>Annual Lobster Catch</u> (1,000,000's lbs)	<u>Annual Effort</u> (1,000's of traps)	<u>Number of Fishermen</u>	<u>Catch Per Unit Of Effort</u>	<u>Value</u> ((\$1,000,000's)
1965	18.9	789	5,802	24.0	14.2
1966	19.9	776	5,613	25.6	14.9
1967	16.5	715	5,425	23.1	13.6
1968	20.5	747	5,489	27.4	14.9
1969	19.8	805	5,750	24.6	16.0
1970	18.2	1,180	6,316	15.4	18.2
1971	17.6	1,278	6,702	13.8	17.5
1972	16.3	1,448	7,045	11.3	18.6
1973	17.1	1,172	7,894	14.6	23.3
1974	16.5	1,790	10,523	9.2	23.2
1975	17.0	1,771	10,455	9.5	27.5
1976	19.0	1,754	9,041	10.8	29.2
1977	18.5	1,739	8,827	10.6	32.1
1978	19.1	1,723	8,712	11.1	33.9
1979	22.1	1,810	8,600	12.2	39.9
1980	22.0	1,846	9,200	11.9	41.7
1981	22.6	1,860	8,548	12.2	47.2
1982	22.9	2,000	8,895	11.5	50.8
1983	22.0	2,000	8,730	11.0	51.2
1984	19.6	2,000	-	9.8	49.3

SOURCE: Maine Division of Marine Resources.

The ex-vessel price of lobster increased from \$.75 per pound to \$2.33 per pound, or approximately 211 percent. The gross national product price deflator increased by 190 percent over this period; thus, lobster prices increased in real terms by approximately 7 percent. Real and nominal ex-vessel prices in the Maine lobster fishery are shown in Table 3-3. Although ex-vessel prices adjusted for inflation have increased since

1965, costs also adjusted for inflation, have increased even faster over this period. Economic indices describing the Maine lobster fishery are displayed in Table 3-4.

One factor depressing prices is imports. Data presented in Table 3-5 shows that imports made up an increasing share of the U.S. supply over the period 1974 to 1983. A recent study² indicates that a one percent increase in imports causes ex-vessel prices to fall by .25 to .50 percent. If imports were to fall to zero, ex-vessel prices would increase by \$.24 per pound.

However, there is little indication that import levels are going to decrease; thus they should continue to be a factor in the economic make-up of the lobster fishery industry.

TABLE 3-3
REAL AND NOMINAL EX-VESSEL PRICES
IN MAINE FISHERY, 1965-1984

<u>Year</u>	<u>Nominal</u> ⁽¹⁾ <u>(\$/lb.)</u>	<u>Real</u> ⁽²⁾ <u>(1965 \$/lb.)</u>
1965	\$.75	\$.75
1966	.75	.73
1967	.82	.77
1968	.73	.68
1969	.81	.69
1970	1.00	.81
1971	.99	.77
1972	1.14	.85
1973	1.36	.96
1974	1.41	.90
1975	1.62	.95
1976	1.54	.86
1977	1.74	.91
1978	1.77	.87
1979	1.81	.82
1980	1.90	.79
1981	2.06	.78
1982	2.22	.80
1983	2.33	.80
1984	\$2.52	.84

(1) Derived from Table 3-1

(2) Nominal prices adjusted by GNP price deflator series

²Hasselbach, Nancy L, Dirlam, Joel B., and Gates, John M.; "Canadian Lobster Imports and the New England Lobster Industry," Marine Policy, January 1981.

TABLE 3-4
INDICES OF COST, PRICE, EFFORT, AND HEALTH
FOR THE LOBSTER FISHERY⁽¹⁾

<u>Year</u>	<u>Output Cost Index (Cost/Unit Of Landings)</u>	<u>Input Price Index</u>	<u>Average Ex-Vessel Price Index</u>	<u>Effort Index (Vessel Days Absent)</u>	<u>Health Index (Price/Cost)</u>
1965	100.00	100.00	100.00	100.00	1.00
1966	99.63	104.20	99.56	100.95	1.00
1967	111.96	105.90	107.76	92.43	0.96
1968	117.71	109.50	95.79	116.84	0.81
1969	122.22	115.60	107.76	111.18	0.88
1970	130.52	119.40	123.73	105.32	0.95
1971	141.89	118.80	130.38	111.18	0.92
1972	126.28	121.40	137.03	89.66	1.09
1973	161.47	135.20	170.29	108.21	1.05
1974	176.14	166.60	183.59	92.26	1.04
1975	228.57	177.20	214.58	116.38	0.94
1976	192.23	184.80	195.65	104.79	1.02
1977	238.50	196.0	207.87	119.27	0.87
1978	238.30	214.30	233.41	112.79	0.98
1979	256.00	246.10	246.37	122.07	0.96
1980	285.35	287.60	229.38	115.63	0.80
1981	296.57	321.90	260.85	110.55	0.88
1982	311.47	319.80	279.68	116.19	0.90

(1) Data from Maine Dept. of Marine Resources, Lobster Research Program, Lobster Information Leaflet #12, July 1983.

Source: Status of the Fishery Resources Off the Northeastern United States for 1983, National Marine Fisheries Service

TABLE 3-5
U.S. SUPPLY OF AMERICAN LOBSTERS, 1974-83
(Round Weight)

U.S. commercial landings			Imports (1)				
Year	Quantity	Percentage of total supply	Fresh and frozen	Quantity		Percentage of total supply	Total supply
				Canned	Total		
	Thousand Pounds	Percent	---Thousand pounds---			Percent	Thousand Pounds
1974	28,543	53.3	17,586	7,392	24,978	46.7	53,521
1975	30,200	52.3	18,325	9,243	27,568	47.7	57,768
1976	31,483	51.9	19,176	9,957	29,133	48.1	60,616
1977	31,773	52.5	16,944	11,818	28,762	47.5	60,535
1978	34,419	55.9	16,468	10,648	27,116	44.1	61,535
1979	37,184	54.5	22,790	8,307	31,097	45.5	68,281
1980	36,952	53.4	22,503	9,699	32,202	46.6	69,154
1981	37,494	48.2	26,857	13,459	40,316	51.8	77,810
1982	39,445	48.6	26,205	15,480	41,685	51.4	81,130
1983	*44,206	47.7	43,439	4,977	*48,416	52.3	*92,622

(1) Imports were converted to round (live) weight by using these conversion factors: 1.00, whole; 4.50, meat; and 4.64, canned. *Record.

Note:--Data in above table has been revised.

Source: Fisheries of the U.S., 1983, NMFS.

Lobster Stock Status

The status of the lobster stock is described in Table 3-6, which is reprinted from the NMFS publication, Status of the Fishery Resources Off the Northeastern United States for 1983. Data in that publication indicates that stock biomass declined following the development of the offshore trap fishery (1969) and stabilized at reduced levels in more recent years. High mortality rates for lobster due to fishing pressures remain a source of serious concern. However, even with this higher mortality rate, it is assumed that the resource will continue to support current levels of fishing activity.

Demand for Lobster

An empirical analysis³ of the demand for lobster indicates that a one percent rise in lobster ex-vessel price will decrease consumption by .3 percent. An increase in per capita income of one percent will increase the demand for lobster by 1.7 percent.

TABLE 3-6

COMMERCIAL AND RECREATIONAL LANDINGS (METRIC TONS, LIVE WEIGHT)
OF AMERICAN LOBSTER FROM THE GULF OF MAINE - MID-ATLANTIC AREA,
1971-1983

Category	Year								
	1971-1975 average	1976	1977	1978	1979	1980	1981	1982	1983
USA									
recreational									
State waters ¹	-	-	-	-	-	-	-	-	-
Commercial									
USA:									
Offshore ²	3.8	3.9	3.0	3.3	2.5	2.2	1.8	2.2	2.5
Inshore ³	10.1	10.5	11.4	12.4	15.0	15.3	15.8	15.7	17.5
Canada:									
Georges Bank	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3
Other	-	-	-	-	-	-	-	-	-
Total nominal catch	14.1	14.6	14.7	16.0	17.7	17.7	17.8	18.2	20.3
Total allowable catch	-	-	-	-	-	-	-	-	-

Long-term potential catch = 3.4
Importance of recreational fishery = Insignificant
Status of management = FMP in preparation
Status of exploitation = Fully exploited
Size at 50% maturity = 10 cm (3.9 inches) carapace length

M = 0.10 $F_{0.1}$ = Unknown F_{max} = 0.18 (males) $F_{1983} = > F_{max}$
0.23 (females)

¹ Unknown.

² Outside 12 miles.

³ Within 12 miles.

³Dow, Robert L., Bell, Frederick W., and Harriman, Donald M., Bio-economic Relationships for the Maine Lobster Fishery with Consideration of Alternative Management Schemes, NMFS March 1975.

TABLE 3-7

MAINE AMERICAN LOBSTER STATISTICS

Year	Catch in lbs	# traps	#fishermen	#lobster boats
1965	18,861,300	788,135	5,834	5,455
1966	19,915,600	775,708	5,688	5,330
1967	16,489,300	715,246	5,431	5,099
1968	20,501,800	747,580	5,527	5,195
1969	19,834,900	819,375	5,814	5,704
1970	18,172,200	1,180,010	6,326	6,324
1971	17,558,500	1,278,226	6,670	6,669
1972	16,256,600	1,448,365	7,039	7,004
1973	17,044,100	1,822,490	8,151	7,895
1974	16,457,600	1,777,500	10,603	7,590
1975	17,007,500	1,770,570	10,569	7,776
1976	19,001,053	1,754,000	9,041	-
1977	18,487,200	1,750,795	8,817	7,286
1978	19,130,459	1,723,000	8,712	-
1979	22,133,235	1,810,000	8,600	-
1980	21,980,691	1,850,000	8,660	-
1981	22,631,619	1,860,000	8,548	-
1982	22,893,287	1,900,000	8,895	-
1983	21,974,946	2,000,000	8,730	-
1984	19,538,689	2,000,000	8,486	-

The increase in demand and rise in ex-vessel price has resulted in an expansion in the number of lobster boats in the fishery and in the number of traps fished per boat. As shown in Table 3-7, the number of lobster boats increased from 5,455 to 7,286 during the period 1965 to 1977, or approximately 33 percent. The number of traps per boat increased from 144 to 239 over the same period, or approximately 66 percent.

It is assumed that many of the same trends affecting the Maine lobster fishery are also affecting the Perkins Cove lobster fleet. The number and size composition of the existing fleet are assumed to remain as they are today without a significant change. The reason for this assumption is that the economics of lobstering weigh against continued expansion of effort. Because of the current heavy pressure on the lobster fishery it appears that increased effort will increase costs more than revenues. Additionally the physical size of Perkins Cove itself imposes a physical constraint on fleet expansion. At present, there are no additional available moorings and the harbor has imposed a 42-foot restriction on length. The size distribution of the Perkins Cove fleet is shown in Table 3-8. The fleet is comprised of 20 lobster boats, two draggers, two longliners and one tuna boat. Some of the boats combine lobstering with dragging or tuna fishing.

TABLE 3-8

DISTRIBUTION BY BOAT LENGTH OF
PERKINS COMMERCIAL COVE FLEET, 1985

<u>Length (ft)</u>	<u>Number</u>
<30	4
30-34	10
35-36	6
37-39	3
>40	2
TOTAL	<u>25</u>

Fleet Operating Costs

Based upon information provided by Perkins Cove fishermen, the fleet waits from two to three hours to enter the channel. Waiting time for each boat depends upon its draft, with the deeper draft vessels waiting longer. In addition, boats are grounding both at anchorage and underway in the channel. Annual damages range from \$100 to \$1500 at anchorage, and from \$250 to \$3500 while underway. Improvement plans under consideration will either eliminate or reduce delay costs and grounding damages incurred by the fleet.

WITH PROJECT CONDITION

Project Commercial Benefits

There are three options under consideration to improve navigation conditions in Perkins Cove. Option A provides for the dredging of the channel and anchorage area to a depth of 6 feet. Options B and C would dredge to depths of 7 and 8 feet, respectively. Project commercial benefits are defined as the increase in net income to fishermen. It is assumed that alternatives under consideration will not affect harvest rates or prices. Benefits will result from a reduction in harvesting costs for the existing level of catch. Alternatives will result in less tidal delay and reduction in damages due to grounding while underway in the main channel as well as at anchor.

Option A

Option A provides for dredging to a depth of six feet. An additional foot of depth should reduce or eliminate tidal delay for a portion of the fleet. Information was provided by the Perkins Cove fleet on loaded drafts and the extent of tidal delay.

TABLE 3-9
PERKINS COVE, ME
COMMERCIAL FISHING FLEET
DRAFTS

<u>Boat length</u> ¹	<u>Loaded Drafts, ft</u>
18	1
20	1
21	1
22	2
30 (2)	3
30	3.5
32	3
32(2)	3.5
32	4
32	4.5
33	4
34	3.5
35	4
35	4.5
35	5
36 (3)	4
38	4
38 (2)	4.5
40	5
40	6

¹ Number of boats in parentheses, if greater than 1.

Based on actual operating practices described by the Harbormaster, it is assumed that boats drawing less than 4 feet loaded will be able to enter and exit the harbor without tidal delay. It is further assumed that these boats will suffer minimal damages due to grounding. Based on data given in Table 3-9 there are 11 vessels that fall into this category. Thus the benefits of deepening will accrue to 14 vessels with loaded drafts four feet or greater.

Examination of the data indicated that the extent of tidal delay is directly related to vessel drafts. Vessels with drafts less than five feet waited an average two hours and those with drafts greater than five feet waited on average three hours. The calculation of tidal delay costs and grounding costs is displayed in Table 3-10. Information on hours delayed, occurrences of delay, fuel consumption, and grounding costs were provided by fishermen. Fuel costs were obtained from a marina that services a nearby fishing fleet. Labor costs were valued at the prevailing manufacturing wage rate for the Portland, Maine MSA. The data were grouped by draft size for analysis.

In the without-project condition delay costs and grounding damage are assumed to be incurred by all vessels with drafts equal to or greater than four feet. With Option A these costs will be incurred by vessels with drafts equal to or greater than five feet. With Option B vessels drafting

six feet or more will still incur delays and suffer grounding damage. Option C would practically eliminate all delays and groundings for the Perkins Cove commercial fleet.

Perkins Cove lobstermen store their daily catch in cages that are suspended from their mooring lines. The typical cage is one to two feet high and stores approximately 150 lbs of lobster. At low tide the cages are susceptible to damage from moored boats. Occasionally, the cages are damaged by recreation boats that do not follow the channel when entering or leaving the cove. It is estimated that 12 cages a year are damaged at a cost of \$228 per occurrence. On average, the cages will be half-full resulting in the loss of 75 lbs. of lobster valued at \$2.50 per pound. Cage repair is approximately \$40.

TABLE 3-10
PERKINS COVE, ME
DELAY AND GROUNDING COSTS

Without Project

Fuel Costs:

4< Drafts <5: 11 boats x 2 hrs delayed x 35 days x 4 gal/hr x \$1.09/gal = \$3400
 Drafts >5: 3 boats x 3 hrs delayed x 35 days x 4 gal/hr x \$1.09/gal = \$1400
Subtotal \$4800

Labor Costs:

4< Drafts <5: 11 boats x 2 hrs delayed x 35 days x 1 person/boat x \$9.18/hr = \$7,100
 Drafts >5: 3 boats x 3 hrs delayed x 35 days x 2 people/boat x \$9.18/hr = \$5,800
Subtotal \$12,900

Grounding Damages:

4< Drafts <5: 11 boats x \$1738/boat = \$19,100
 Drafts >5: 3 boats x \$1738/boat = \$5,200
Subtotal \$24,300

Lobster Cage Damages:

12 Occurrences x \$228 = \$2700

Total \$ 44,700

With Option A - 6 feet

Fuel Costs:

5< Drafts <6': 2 boats x 2 hrs delayed x 35 days x 4 gal/hr x \$1.09/hr = \$600
 Drafts >6': 1 boat x 3 hrs delayed x 35 days x 4 gal/hr x \$1.09/gal = \$500
Subtotal \$1,100

Labor Costs:

5< Drafts <6': 2 boats x 2 hrs delayed x 35 days x 1 person/boat x \$9.18/hr = \$1,300
 Drafts >6': 1 boats x 3 hrs delayed x 35 days x 2 people/boat x \$9.18/hr = \$1,900
Subtotal \$3,200

Grounding Damages²:

5< Drafts <6: 2 boats x \$1738/boat = \$3,500
 Drafts >6: 1 boats x \$1738/boat = \$1,700
Subtotal \$5,200

Lobster Cages Damages:

12 Occurances x \$228 x .25 = 700

Total \$10,200

Option B - 7 feet

Fuel Costs:

Drafts >6': 1 boats x 2 hrs delayed x 35 days x 4 gal/hr x \$1.09/gal = \$300

Labor Costs:

Drafts >6': 1 boats x 2 hrs delayed x 35 days x 2 people/boat x \$9.18 = \$1,300

Grounding Damages:

Drafts >6': 1 boats x \$1738/boat = \$1700

Lobster Cage Damages:

12 Occurrences x \$228 x .10 = 300

Total \$3,600

Option C - 8 feet

Fuel Costs	0
Labor Costs	0
Grounding Damage	0
Total	0

Commercial Benefits

Project benefits result from the reduction in delay costs and grounding damage. Benefits are calculated by subtracting operating costs with the project from operating costs without the project. These costs are obtained from Table 3-10 and summarized below.

	<u>Without Project</u>		<u>With Project</u>	<u>Benefit</u>
Option A - 6 ft.	\$44,700	-	10,200	= \$34,500
Option B - 7 ft.	\$44,700	-	3,600	= 41,000
Option C - 8 ft.	\$44,700	-	0	= 44,700

Recreation Benefit

Recreation benefit is defined as the difference in recreation value with and without the project. There are three methodologies used to determine recreation value: (1) travel cost, (2) contingent value and (3) unit day value. The travel cost method uses distance traveled as a surrogate for price in estimation of a demand relationship for a recreational activity. The travel cost method is not used in this study as most of the boat owners reside in the vicinity of the river. Thus, there would not be enough variation in the independent variable to estimate a demand function.

The contingent value method obtains estimates of changes in NED (National Economic Development) benefits by directly asking individuals about their willingness to pay. This method is limited by the requirement of having all survey forms subject to the clearance procedures of OMB (Office of Management and Budget). Since a list of approved survey questions needed to apply this technique to recreational boating does not currently exist, the amount of time required to obtain specific survey questions needed to apply this technique to recreational boating does not currently exist, the amount of time required to obtain specific survey authority precludes its use. Additionally, this method is very expensive and would make study costs too high a proportion of total project costs.

The unit day value method was chosen based on its simplicity, ease of application and its ability to measure increases in efficiency (benefits) at the study site. The improvements at the site affect less than 750,000 user days which is a criterion of use. Additionally, the study cost of this approach is more reasonable when compared to overall project cost.

Recreation benefits are computed using the unit day value method described in the Water Resource Council's Principles and Guidelines. Recreational boating is considered to be "generalized recreation other than hunting and fishing." Point value in FY 1987 dollars from Table 3-12 were assigned to the Perkins Cove for the criteria listed in Table 3-11.

TABLE 3-11

Guidelines for Assigning Points For General Recreation

Criteria	Judgment factors				
(a) Recreation experience ¹ Total points: 30 Point value:	Two general activities ² 0-4	Several general activities 5-10	Several general activities; one high quality value activity ³ 11-16	Several general activities; more than one high quality high activity 17-23	Numerous high quality value activities; some general activities 24-30
(b) Availability of opportunity ⁴ Total points: 18 Point value:	Several within 1 hr. travel time; a few within 30 min. travel time 0-3	Several within 1 hr. travel time; none within 30 min. travel time 4-6	One or two within 1 hr. travel time; none within 45 min. travel time 7-10	None within 1 hr. travel time 11-14	None within 2 hr. travel time 15-18
(c) Carrying capacity ⁵ Total points: 14 Point value:	Minimum facility development for public health and safety 0-2	Basic facilities to conduct activity(ies) 3-5	Adequate facilities to conduct without deterioration of the resource or activity experience 6-8	Optimum facilities to conduct activity at site potential 9-11	Ultimate facilities to achieve intent of selected alternative 12-14
(d) Accessibility Total points: 18 Point value:	Limited access by any means to site or within site 0-3	Fair access, poor quality roads to site; limited access within site 4-6	Fair access, fair road to site; fair access, good roads within site 7-10	Good access, good roads to site; fair access, good roads within site 11-14	Good access, high standard road to site; good access within site 15-18
(e) Environmental quality Total points: 20 Point value:	Low esthetic factors ⁶ exist that significantly lower quality ⁷ 0-2	Average esthetic quality; factors exist that lower quality to minor degree 3-6	Above average esthetic quality; any limiting factors can be reasonably rectified 7-10	High esthetic quality; no factors exist that lower quality 11-15	Outstanding esthetic quality; no factors exist that lower quality 16-20

¹ Value for water-oriented activities should be adjusted if significant seasonal water level changes occur.

² General activities include those that are common to the region and that are usually of normal quality. This includes picnicking, camping, hiking, riding, cycling, and fishing and hunting of normal quality.

³ High quality value activities include those that are not common to the region and/or Nation and that are usually of high quality.

⁴ Likelihood of success at fishing and hunting.

⁵ Value should be adjusted for overuse.

⁶ Major esthetic qualities to be considered include geology and topography, water, and vegetation.

⁷ Factors to be considered to lowering quality include air and water pollution, pests, poor climate, and unsightly adjacent areas.

Source: Corps Regulation ER 1105-2-40, Change 2, July 9, 1983

TABLE 3-12

(FY1987) Conversion of Points to Dollar Values

POINT VALUES

Activity Categories	0	10	20	30	40	50	60	70	80	90	100
General Recreation (Points from Table VIII-3-2)	1.75	2.05	2.40	2.75	3.20	3.80	4.10	4.40	4.70	5.00	5.30
General Fishing & Hunting (Points from Table VIII-3-2)	2.60	2.85	3.15	3.40	3.75	4.15	4.50	4.85	5.05	5.25	5.30
Specialized Fishing & Hunting (Points from Table VIII-3-3)	12.35	12.70	13.00	13.35	13.65	14.90	16.15	17.45	18.70	18.05	21.25
Specialized Recreation Other than Fishing & Hunting (Points from Table VIII-3-3)	7.10	7.65	8.25	8.85	9.45	10.65	11.80	14.15	16.50	18.90	21.25

Point values were assigned for both the with-project and without-project conditions, and are converted to dollar values as shown on Table 3-13.

TABLE 3-13
PERKINS COVE, ME
UNIT DAY VALUES

	<u>WO Project</u>	<u>With Project</u>
a) Recreation Experience	4	4
b) Availability of opportunity	3	3
c) Carrying Capacity	7	7
d) Accessibility	7	16
e) Environmental quality	<u>15</u>	<u>15</u>
Total Points	36	45
Value (FY 86)	\$3.02	\$3.50

The recreational value is the product of the annual usage, or the number of unit days, and the value per unit day. The recreation fleet is comprised of charter boats that provide services for recreational fishermen and sightseers, and privately owned boats.

Charter boats operate for a 23-week season beginning early in May and running until Columbus Day, October 12. Assuming 75 percent good days, this would result in 120 days of operation for each charter boat. Based on information provided by charter boat operators annual usage is presented in Table 3-14.

Recreation benefit is the difference in recreation value with and without the project. Recreation value is the product of annual usage and unit day value. Recreation benefits for charter boat operation are shown in Table 3-15.

TABLE 3-14
PERKINS COVE, ME
CHARTER BOAT
USAGE BY DRAFT

								Annual
No. Boats ¹ x People/Boat x Trips/Day x No. Days = User days								
<u>4< Draft <5</u>								
1	x	12	x	1	x	100	=	1,200
1	x	6	x	2	x	120	=	1,440
2	x	6	x	1	x	120	=	1,440
2	x	45	x	4	x	120	=	43,200
						Total		47,280
<u>5< Draft < 6</u>								
3	x	37	x	2	x	120	=	26,640
1	x	45	x	4	x	120	=	21,600
						Total		48,240
<u>Draft >6</u>								
1	x	6	x	2	x	120	=	1,440
						Total		96,960

¹ The number of boats need not agree with that reported earlier as some fishing boats are also used for charter service. This table also relects a new boat coming into service in 1986.

TABLE 3-15
PERKINS COVE, ME
CHARTER BOAT
RECREATION BENEFIT

Without Project

Annual User Days	x	UDV	=	Recreation Value
96,960	x	\$3.02	=	\$292,819

With Option A - 6 feet

47,280	x	\$3.50	=	\$165,480
49,680	x	3.02	=	150,034
				<u>\$315,514</u>

With Option B - 7 feet

95,520	x	3.50	=	\$334,320
1440	x	3.02	=	4,349
				<u>\$338,669</u>

With Option C - 8 feet

96960	x	\$3.50	=	\$339,360
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Benefit

Option A:	\$315,500	-	292,900	=	\$22,700
Option B:	\$338,700	-	292,800	=	\$45,900
Option C:	\$334,500	-	289,900	=	\$46,600

Reduction in grounding damages to the charter boat fleet is also a recreation benefit. Estimated grounding damages with and without the project are presented in Table 3-16 and project benefits due to reduced grounding damages are shown in Table 3-17.

TABLE 3-16
PERKINS COVE, ME
CHARTER BOAT
GROUNDING DAMAGES

Without Project

4 _≤ Drafts <5:	6 boats	x	\$1,738/boat	=	\$10,428
5 _≤ Drafts <6:	4 boats	x	\$1,738/boat	=	6,952
Drafts ≤6:	1 boat	x	\$1,738/boat	=	<u>1,738</u>
					\$19,118

With Option A - 6 feet

5 _≤ Drafts <6:	4 boats	x	\$1,738/boat	=	\$6,952
Drafts ≥6:	1 boat	x	\$1,738/boat	=	<u>1,738</u>
					\$8,690

With Option B - 7 feet

Drafts ≥6:	1 boat	x	\$1,738/boat	=	\$1,738
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With Option C - 8 feet

0 boat	x	\$1,738/boat	=	\$0
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TABLE 3-17
PERKINS COVE, ME
GROUNDING DAMAGES
PREVENTED

Options	Without Project Damages	-	With Project Damages	=	Benefit
A:	\$19,100	-	8700	=	10,400
B:	19,100	-	1700	=	17,400
C:	19,100	-	0	=	\$19,100

The distribution of the private boat fleet, by boat type and length in Perkins Cove is presented in Table 3-18.

TABLE 3-18
PERKINS COVE, ME
PRIVATE RECREATION FLEET

<u>Type</u>	<u>Length</u>	<u>Number</u>
Outboards	15-20	8
	21-25	4
	26 & up	
Sterndrives	15-20	2
	21-25	3
	26 & up	4
Inboards	15-20	
	21-30	2
	31-40	1
	41 & up	
Daysailers	10-15	2
	16-20	2
	21 & up	1
Cruising Sailboats	21-25	13
	26-30	3
	31-35	3
	36 & up	1
		<hr/> 49

Based on data provided by the Harbormaster, only the larger sailboats have drafts greater than 4 feet and thus are affected by the channel depth.

The recreation boat season for the private fleet is the same as that for the charter boats. Assuming 75 percent of the good boating weather results of this period in 18 weeks of operation. Recreation value and benefit is presented in Table 2-19. No grounding damages were reported for the private fleet.

TABLE 3-19
PERKINS COVE, ME
PRIVATE FLEET
RECREATION VALUE

Draft	No. Boats	x	Users/ Boat	x	No Weeks	x	Trips/ Week	x	UDV	=	Value
<u>Without Project</u>											
4 ≤ D < 5:	7	x	3	x	18	x	3	x	\$3.02	=	\$3,425
5 ≤ D < 6:	4	x	3	x	18	x	3	x	3.02	=	1,957
D ≥ 6:	1	x	3	x	18	x	3	x	3.02	=	<u>480</u> \$5,871
<u>With Option A - 6 feet</u>											
4 ≤ D < 5:	7	x	3	x	18	x	3	x	\$3.50	=	\$3,969
5 ≤ D < 6:	4	x	3	x	18	x	3	x	\$3.02	=	1,957
D ≥ 6:	1	x	3	x	18	x	3	x	\$3.02	=	<u>489</u> \$6,415
<u>With Option B - 7 feet</u>											
4 ≤ D < 5:	7	x	3	x	18	x	3	x	\$3.50	=	\$3,969
5 ≤ D < 6:	4	x	3	x	18	x	3	x	3.50	=	2,268
D ≥ 6:	1	x	3	x	18	x	3	x	3.02	=	<u>489</u> \$6,726
<u>With Option C - 8 feet</u>											
4 ≤ D < 5:	7	x	3	x	18	x	3	x	\$3.50	=	\$3,969
5 ≤ D < 6:	4	x	3	x	18	x	3	x	3.50	=	2,268
D ≤ 6:	1	x	3	x	18	x	3	x	3.50	=	<u>567</u> \$6,804
<u>Benefit</u>											
Option A:	\$6,400 - \$5,900 = \$500										
Option B:	\$6,700 - 5,900 = \$800										
Option C:	\$6,800 - 5,900 = \$900										

The recreation benefit for each option under consideration is presented in Table 3-21.

TABLE 3-20
PERKINS COVE, MAINE
RECREATION BENEFIT

	<u>Option A</u>	<u>Option B</u>	<u>Option C</u>
Charter Boats	\$22,700	\$45,900	\$46,600
Private Boats	500	800	900
TOTAL	\$23,200	\$46,700	\$47,500

Economic Justification

Commercial benefits include prevention of grounding damages to charter boats as well as efficiency gains to the commercial fishing fleet. The benefits are summarized in Table 3-21.

TABLE 3-21
PERKINS COVE, MAINE
COMMERCIAL BENEFIT

	<u>Option A</u>	<u>Option B</u>	<u>Option C</u>
Fishing Fleet	\$34,500	\$41,100	\$44,700
Charter Boats	10,400	17,400	19,100
TOTAL	\$44,900	\$58,500	\$63,800

A comparison of benefits and costs for each plan under consideration is shown in Table 3-22 and Table 3-23.

TABLE 3-21
PERKINS COVE, MAINE
PROJECT BENEFIT AND COST
WITH UPLAND DISPOSAL

	<u>Option A</u> 6'	<u>Option B</u> 7'	<u>Option C</u> 8'
Annual Benefit			
Commercial	\$44,900	\$ 58,500	\$ 63,800
Joint-Use			
Recreation	<u>23,200</u>	<u>46,700</u>	<u>47,500</u>
TOTAL	\$68,100	\$105,200	\$111,300
SAY	\$68,000	\$105,000	\$111,000
Annual Cost	\$35,000	\$ 54,000	\$ 77,000
(Upland Disposal)			
Net Benefit	\$33,000	\$ 51,000	\$ 34,000
BCR	1.9	1.9	1.4
Net Benefit (1)	\$10,000	\$ 4,000	\$ 0
BCR (1)	1.3	1.1	0

TABLE 3-23
PROJECT BENEFIT AND COST
PERKINS COVE, MAINE
WITH OCEAN DISPOSAL

	<u>Option A</u> 6'	<u>Option B</u> 7'	<u>Option C</u> 8'
Annual Benefit			
Commercial	\$44,900	\$ 58,500	\$ 63,800
Joint-Use			
Recreation	<u>23,200</u>	<u>48,700</u>	<u>47,500</u>
TOTAL	\$68,100	\$105,200	\$111,300
SAY	\$68,000	\$105,000	\$111,000
Annual Cost	\$30,000	\$ 45,000	\$ 66,000
(Ocean Disposal)			
Net Benefit	\$38,000	\$ 60,000	\$ 45,000
BCR	2.3	2.3	1.7
Net Benefit (1)	\$15,000	\$ 14,000	\$ 0
BCR (1)	1.5	1.3	0

(1)Excludes joint-use recreation benefits.

APPENDIX 3

SECTION B

SOCIAL AND ECONOMIC IMPACT ASSESSMENT

SECTION B

PERKINS COVE OGUNQUIT, MAINE

SOCIAL AND ECONOMIC IMPACT ASSESSMENT

INTRODUCTION

This section of the Ogunquit study describes the social and economic conditions present in the study area. The section identifies the baseline conditions of the area, including population, housing, employment and land use, as well as without-project conditions.

Baseline Conditions

Location and Background

Perkins Cove, in the town of Ogunquit, is located on the southeastern coast of Maine, about 33 miles southwest of Portland and 75 miles north of Boston. Perkins Cove is Ogunquit's only harbor. It is a very small, well protected harbor. The cove is where the Josias River empties into the Atlantic Ocean.

Ogunquit became a town in 1980 and was formerly a self-governing village corporation within the town of Wells. The area is only 4 square miles. The influx of seasonal residents to this scenic resort community elevates the population during the summer months. Ogunquit is a very small community and the tourists provide the major source of income for the community. The cove is very popular with yachtsmen where a number of fishing, pleasure and party fishing boats base.

Population

In 1970 the Ogunquit population was 944 persons and the 1980 population was 1,492 persons, a 58.1% increase. The summer population swells to over 10,000 persons.

The town of Ogunquit is part of York County which is 1,008 square miles. The 1980 population is 139,666. Data is displayed below for York County and the State of Maine.

YORK COUNTY		STATE OF MAINE	
<u>Year</u>	<u>Population</u>	<u>Year</u>	<u>Population</u>
1970	111,576	1980	1,125,030
1960	99,402	1970	993,772
1950	93,541		
1940	82,550		
1930	72,934		

SOURCE: U.S. Census of Population , 1930, 1940, 1950, 1960, 1970, 1980.

Employment

The unemployment rate in Ogunquit has consistently been much lower than York County or the state of Maine. Data is indicated in Table 3-1.

TABLE 3-24
LABOR FORCE

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
<u>Ogunquit</u>				
Civilian Labor Force	776	791	874	800
Number Employed	748	750	841	788
Unemployment Rate	3.6%	5.18%	3.77%	1.5%
<u>York County</u>				
Civilian Labor Force	61,760	62,290	66,780	70,030
Number Employed	57,980	57,970	61,870	66,640
Unemployment Rate	6.1%	6.9%	7.4%	4.8%
<u>State of Maine</u>				
Civilian Labor Force	509,000	515,000	537,000	552,000
Number Employed	472,000	470,000	488,000	518,000
Unemployment Rate	7.2%	8.6%	9.0%	6.1%

HOUSING DATA

	<u>Ogunquit</u>	<u>State of Maine</u>
Total Housing Units	991	428,245
Number of Households	778	395,184
Average Persons Per Household	1.92	2.75
Average Price for a Housing Unit	\$62,400	\$ 37,900
Per Capita Income in (1970) Dollars	\$ 8,387	\$ 5,768

SOURCE: Maine State Planning Office

SOURCE: U.S. Census of Population, 1980.

Economy

Tourism is clearly the major source of income for Ogunquit. There are dozens of restaurants, motels/hotels, and gift shops catering to transient tourists. There are very few inexpensive establishments, the vast majority cater to the wealthy. The chief attractions of the area are the Ogunquit Summer Play house and the expensive antique shops. There are no industrial plants in the area. In the winter when all of the tourists leave, it is very quiet. Some residents work at Portsmouth Naval Shipyard and others go to neighboring towns to work in shoe plants. The residents do most of their shopping and obtain most services from either Portsmouth to the south or Portland to the north.

Housing

Per capita income is much greater in Ogunquit than for the State of Maine. Also, the average price of a home is much more costly in Ogunquit than for the State as a whole. Data is displayed in Table 3-24.

Land Use

The dominant type of land use in the vicinity of the cove is commercial and residential. The business establishments consist of a restaurant, stores and lodgings at the harbor. A marine railway on which craft of up to 50 feet in length can be hauled out is at the east bank of the town wharf. The proposed navigation improvement will not impact present or future land use plans.

Perkins Cove

Perkins Cove is one of the smallest, most crowded harbors on the entire coast of Maine. The cove is entered by a narrow entrance channel which leads to an anchorage basin at the head of the harbor known as Flat Pond. the entrance to the harbor is crossed by a footbridge, with a clearance of 16 feet and a channel width of 20 feet. The bridge and channel itself make it impossible for large boats to enter the harbor. In the harbor there are spaces for approximately 60 to 70 boats. When moorings become available, commercial fishing vessels get first preference. A relatively high mooring fee is charged by the town. As a result, Perkins Cove is dominated by commercial fishing boats.

Both recreational and commercial vessels use Perkins Cove and the Josias River Basin. Based on information supplied by local officials there are approximately 25 commercial fishing vessels, 9 charter fishing vessels, and 49 recreational vessels which use the existing project. Additionally, many transient vessels use the harbor each year. Originally the Josias River flowed into Oarweed Cove after meandering across the marsh known as Flat Pond. Local interests changed the river's course so that it emptied into Perkins Cove through a channel cut across the bar between Adams Island and the mainland to the west. The old channel was filled and eventually became the site of the present day pier. This existing pier was originally constructed as a breakwater between Adams Island and the mainland to the northwest. the structure was later enlarged to its present condition to support several buildings, a public parking area and a public dock. The Flat Pond marsh and the channel were first dredged by local interests and in later years by the U.S. Army Corps of Engineers to form the existing 4.2-acre, 5-foot deep mlw anchorage basin and the 40-foot wide, 5-foot deep mlw access channel.

WITHOUT PROJECT CONDITIONS

Perkins Cove is surrounded by establishments catering to tourists. On the east, there is a small spit of land, separating the anchorage from the Atlantic Ocean, which contains a large town parking lot and a cluster of small weather beaten shops, restaurants and excursion boat floats. On the west side there are two large modern motel complexes.

The problem that the fishermen of Perkins Cove have are frequent groundings, damaged catches and hour long waits to dock until the tide rises. The fishermen feel that the harbor is too shallow, being only 5 feet deep. In order for the commercial fleet to remain competitive, they must utilize modern large vessels.

The trend toward larger commercial fishing vessels has led to a lack of adequate depth for these deeper draft boats within the anchorage area and entrance channel. This has resulted in increased labor and fuel costs caused by delays due to tidal navigation. Damages due to groundings have also increased as moor deeper draft vessels are added to the fleet.

The navigational needs of the community as developed through identification of its problems are evident. Adequate access channel and anchorage depths must be provided for the new larger commercial fishing vessels which are replacing the aging vessels now gradually leaving the fleet. New anchorage areas must be provided if the Ogunquit area's full potential for an increased recreational fleet is to be realized.

The recreational boating industry in New England is currently undergoing a rapid rate of growth. In the southern Maine Coastal Area this is related to an increase in the construction of seasonal second-homes. The seasonal population in Ogunquit during the summer is higher than the year-round population. The total summer fleet, both commercial and recreational, at Perkins Cove is 114 percent higher than the year-round exclusively commercial fleet. There is an increasing demand for more safe anchorage areas for seasonal recreational craft along the entire Main southern coast including Ogunquit. A waiting list for summer mooring space at Perkins Cove has steadily grown as the summer population has increased. Similar waiting lists for permanent seasonal mooring spaces exist for all neighboring ports.

Population Projections

Ogunquit

<u>Year</u>	<u>Projected Population</u>
1986	1,750
1987	1,750
1988	1,800
1989	1,800
1990	1,850
1991	1,850
1992	1,900

Population Projections
Maine

<u>Year</u>	<u>Projected Population</u>
1986	1,169,550
1987	1,179,550
1988	1,189,400
1989	1,190,950
1990	1,194,650
1991	1,201,350
1992	1,216,200
2000	1,132,000
2020	1,225,000

SOURCE: State of Main Planning Office.

IMPACTS

Navigation improvements in the Josias River at Perkins Cove would result in significant benefits to the existing commercial fishing fleet, recreational boating interests and commercial charter boat operators. Recreational benefits have been computed on the basis of increased leisure time available to boat owners after elimination of tidal delays and a reduction in damages. Benefits to commercial fishing vessels are based on a reduction in operating costs attributed to an elimination of tidal delays. Benefits attributable to reductions in damages due to groundings in the anchorage and channel and reduced vessel repair time have been assessed for all types of vessels.

Noise impacts will be generated by construction activities and by the trucking of the dredged material to the permanent disposal area. This impact is unavoidable but because of the lesser numbers of human and environmental noise receptors in the project area during the winter months its effects will be minimal.

Both of the proposed upland disposal sites are relatively isolated and have moderately altered environments. At the landfill site the owner proposed to stockpile and dredged material for use as cover material in the operation of his dump. At the quarry site the material would be used as fill. Both of these sites have far more capacity than is required for the disposal of the dredged material and are suitable for use as disposal sites for the clean Perkins Cove material. Use of these sites would cause no significant environmental or social impacts. A third disposal alternative would be ocean dumping at the Cape Arundel disposal site.